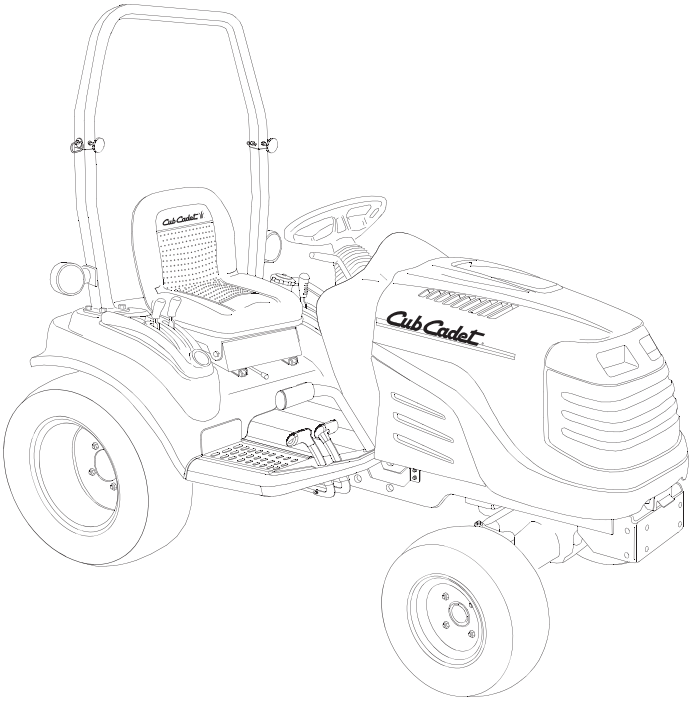
Cub Cadet®

Operator's Manual



SERIES 5000
TRACTOR
MODEL 5234D

IMPORTANT: READ SAFETY RULES AND INSTRUCTIONS CAREFULLY

Warning: *This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department, P.O. Box 361131 Cleveland, Ohio 44136-0019.*

CUB CADET LLC P.O. BOX 361131 CLEVELAND, OHIO 44136-0019 [www.cubcadet.com]

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TO THE OWNER

This Operator's Manual is an important part of your new tractor. The information contained in this manual has been prepared in detail to help you better understand the features, correct operation, adjustments, and maintenance of your tractor. The performance and dependability of this tractor rely greatly on the manner in which it is operated and maintained. Therefore, it is recommended that all operators of the tractor carefully read this manual and fully understand its operation. Also keep the manual available for reference to ensure proper operation, and that maintenance procedures are performed as scheduled to assure the tractor's optimal mechanical condition.

NOTE: *All references to LEFT, RIGHT, FRONT, and REAR, unless specifically stated otherwise, indicate that relative position on the tractor when facing forward while seated in the operator's seat.*

Your authorized *Cub Cadet* dealer is interested in the performance you receive from your tractor, and with the maintenance needed to ensure the satisfactory operation of your tractor. The dealer has trained service personnel familiar with the latest servicing information, is equipped with the latest tools, and has a complete line of genuine *Cub Cadet* service parts which assure proper fit and high quality.

CALLING SERVICE INFORMATION

The engine manufacturer is responsible for all engine-related issues with regards to performance, power-rating, and specifications.

If you have difficulties with the tractor and/or equipment; have any questions regarding the operation or maintenance of this equipment; or desire additional information not found in this manual, contact your dealer. If you need assistance in locating a dealer in your area, contact the Customer Dealer Referral Line by calling:

1-877-282-8684

Or you may contact Cub Cadet via the internet by logging on to our Wed Site at:

www.cubcadet.com

Before contacting your dealer or Cub Cadet, make sure that you have your model number(s) and manufacturing date(s) available.

RECORDING MODEL AND SERIAL NUMBER INFORMATION

Product identification plates are provided for major components of your tractor. The numbers on these plates are important if your tractor should require dealer service, or if you need additional information on your tractor. Prior to using your tractor for the first time, record the numbers from the identification plates in the appropriate spaces provided below.

- The tractor model plate is located on the right frame rail behind the right front tire.
- The engine model, type, and code information is located on a plate affixed to the top of the valve cover, beneath the air cleaner/muffler mounting bracket.
- The transmission serial plate is located on the rear of the transmission, below the PTO shaft.
- The ROPS information plate is located on a vertical leg of the ROPS.

Tractor Model Plate:

_____ _____

Model Number Mfg. Date (Serial No.)

Engine Information:

_____ _____ _____

Engine Model Type Date Code

Transmission Serial Plate:

_____

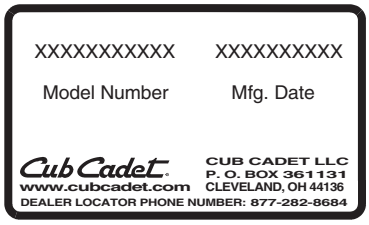
Serial Number

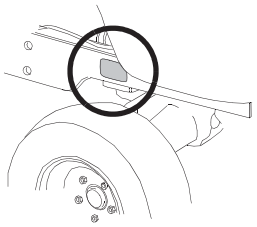
ROPS Information Plate:

_____

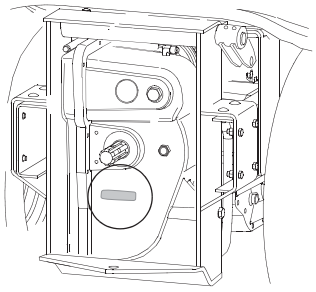
ROPS Serial No.

TRACTOR MODEL PLATE

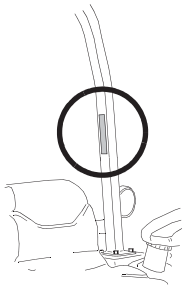




TRANSMISSION SERIAL PLATE



ROPS INFORMATION PLATE



IMPORTANT SAFE OPERATION PRACTICES

WARNING: THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR UNIT. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY. WHEN YOU SEE THIS SYMBOL, HEED ITS WARNING.

WARNING: The engine exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

DANGER: Your tractor was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. To help prevent accidents, read and take the following precautions before operating this tractor. Failure to observe the following safety instructions could result in serious injury or death.

1. GENERAL OPERATION

- Read, understand, and follow all instructions in the operator's manual and on the machine before starting. Keep this manual in a safe place for future and regular reference.
- Only allow responsible individuals familiar with the instructions to operate the machine. All operators should evaluate their ability to operate the tractor safely enough to protect themselves and others from serious injury. Know controls and how to stop the machine quickly.
- Do not put hands or feet under the cutting deck or near rotating parts.
- Clear the area of objects such as rocks, toys, wire, etc. which could be picked up and thrown by the blades. A small object may have been overlooked and could be accidentally thrown by the mower in any direction and cause injury to you or a bystander. To help avoid a thrown objects injury, keep children, animals, bystanders and helpers at least 75 feet from the mower while it is in operation. Always wear safety glasses with side shields or safety goggles during operation or while performing an adjustment or repair, to protect eyes from foreign objects. Stop the blades when crossing gravel drives, walks or roads.
- Be sure the area is clear of other people before mowing. Stop machine if anyone enters the area.
- Never carry passengers.
- Use extreme caution when shifting into reverse and backing up. Always look down and behind before and while backing.
- Be aware of the mower and attachment discharge direction and do not point it at anyone. Do not operate the mower without either the entire grass catcher or the chute guard in place.
- Slow down before turning. Operate the machine smoothly. Avoid erratic operation and excessive speed.
- Never leave a running machine unattended. Always turn off the blades, place the transmission in neutral, set the parking brake, stop the engine and remove key before dismounting.
- Turn off blades when not mowing.
- Stop the engine and wait until the blades come to a complete stop before (a) removing the grass catcher or unclogging chute, or (b) making any repairs, adjusting or removing any grass or debris.
- Mow only in daylight or good artificial light.
- Do not operate the machine while under the influence of alcohol or drugs.
- Use extra care when loading or unloading the machine into a trailer or truck because the unit could tip over causing serious personal injury.
- Never make a cutting height adjustment while the engine is running if the operator must dismount to do so.
- Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts. Do not wear loose fitting clothes or jewelry. They can be caught in moving parts. Never operate a unit in bare feet, sandals or sneakers.

- Disengage all attachment clutches, thoroughly depress the brake pedal and shift into neutral before attempting to start the engine.
- Your mower is designed to cut normal residential grass of a height no more than 10". Do not attempt to mow through unusually tall, dry grass (e.g. pasture) or piles of dry leaves. Debris may build up on the mower deck or contact the engine exhaust presenting a potential fire hazard.
- Use only accessories approved for this machine by *Cub Cadet*. Read, understand and follow all instructions provided with the approved accessory.
- Use the roll bar and seat belt for safe operation. Overturning the tractor without a roll bar, or with a roll bar and the seat belt unfastened, can result in death or injury.
- Always use the seat belt, except if the roll bar has been removed or, if applicable, the roll bar is in the folded position.
- Use the handholds and running boards when getting on and off the tractor to help prevent accidental falls. Keep the running boards clear of mud and debris.
- Keep all safety decals clean and readable. Replace any missing, illegible, or damaged safety decals.
- Always sit in the tractor seat when starting the engine or operating controls. Do not start the engine or operate controls while standing beside the tractor.
- Never tamper with safety devices. Check their proper operation regularly. Contact your Cub Cadet dealer if safety devices malfunction.
- Avoid accidental contact with control pedals while the engine is running, as this can cause unexpected movement of the tractor.
- Pull only from a drawbar or the lower hitch links in the down position. Make certain the drawbar pin is locked in place. Pulling from the rear axle of the tractor or any point above the axle could cause the tractor to overturn.
- Maintain the weight balance of the tractor. Install front end weights to counterbalance heavy implements attached to the three point hitch. Do not operate the tractor with a light front end.
- Do not leave equipment in the raised position.
- Watch for traffic when operating near or crossing roadways. If local laws permit road travel, use the flashing hazard lights and SMV signs when traveling on public roadways.
- Make certain all tractor lights are illuminated when operating at night.
- Check overhead clearance carefully before driving under power lines, wires, bridges or low hanging tree branches, before entering or leaving buildings, or in any other situation where the operator and/or roll bar may be struck, which could result in serious injury.
- If the tractor becomes stuck, use reverse to free the tractor to prevent tractor upset.

2. SLOPE OPERATION

Slopes are a major factor related to loss of control and tip-over accidents which can result in severe injury or death. All slopes require extra caution. If you cannot back up the slope or if you feel uneasy on it, do not operate this unit on that area or serious injury could result.

Do not operate on inclines with a slope in excess of 15 degrees (a rise of approximately 2-1/2 feet every 10 feet). The tractor could overturn and cause serious injury

DO:

- Operate up and down slopes, not across.
- Remove obstacles such as rocks, limbs, etc.
- Watch for holes, ruts or bumps. Uneven terrain could overturn the machine. Tall grass can hide such obstacles.
- Place the transmission in the low range. when climbing or descending slopes. Always keep machine in gear when going down slopes to take advantage of engine braking action.
- Follow the manufacturers recommendations for counterweights to improve stability.
- Keep all movement on the slopes slow and gradual. Do not make sudden changes in speed or direction. Rapid engagement or braking could cause the front of the machine to lift and rapidly flip over backwards which could cause serious injury.
- Avoid starting or stopping on a slope. If tires lose traction, disengage the PTO and proceed slowly straight down the slope.

DO NOT:

- Do not turn on slopes unless necessary; then, turn slowly and gradually downhill, if possible.
- Do not mow near drop-offs, ditches or embankments. The mower could suddenly turn over if a wheel goes over the edge of a cliff or ditch, or if an edge caves in.
- **Do not** mow on wet grass. Reduced traction could cause sliding.
- **Do not** try to stabilize the machine by putting your foot on the ground.

3. CHILDREN

- Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine. Never assume children will remain where you last saw them.
- Keep children out of the mowing area and in watchful care of an adult other than the operator.
- To avoid back-over accidents, always disengage the cutting blades before shifting in reverse. The "PTO Reverse Overide Switch" should not be used when children or others are around.
- Be alert and turn machine off if children enter the area.
- Before and when backing, look behind and down for small children.
- Never carry children, even with the blades off. They may fall off and be seriously injured or interfere with safe machine operation.
- Never allow children under 14 years old to operate the machine. Children 14 years and over should only operate machine under close parental supervision and proper instruction.
- Use extra care when approaching blind corners, shrubs, trees or other objects that may obscure your vision of a child or other hazard.
- Remove key when machine is unattended to prevent unauthorized operation.

4. OPERATING THE PTO

- When operating PTO driven equipment, disengage the PTO, stop the engine, and wait until the PTO stops before dismounting the tractor and disconnecting the equipment.
- Do not wear loose fitting clothing when operating the PTO or when near rotating equipment.
- To prevent injury, do not adjust, unclog, clean, or service PTO driven equipment while the tractor engine is running.
- Make certain all PTO shields are always installed.

5. SAFETY FRAME (ROPS)

Your tractor is equipped with a rollover protective structure (ROPS) which must be maintained in a fully functional condition. Use care when driving through doorways or spaces with a low overhead.

- Never modify the ROPS in any way.
- Never attempt to straighten or reweld any part of the main frame or retaining brackets that have been damaged. Doing so may weaken the structure and endanger your safety.
- Never secure any parts on the main frame or attach the safety frame with anything other than the special fasteners specified.
- Never attach ropes, chains, or cables to the ROPS for pulling purposes.
- Although the ROPS provides you the maximum protection possible, never take unnecessary risks.

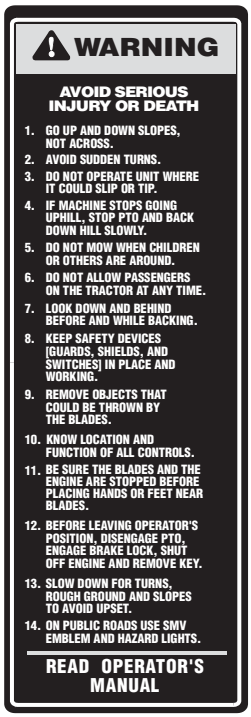
6. SERVICE

- Use extreme care in handling gasoline and other fuels. They are extremely flammable and the vapors are explosive. Use only an approved container.
  a. Use only an approved container.
  b. Never remove fuel cap or add fuel with the engine running. Allow the engine to cool at least two minutes before refueling.
  c. Replace the fuel cap securely and wipe off any spilled fuel before starting the engine as it may cause a fire or explosion.
  d. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
  e. Never refuel the machine indoors because fuel vapors will accumulate in the area.
  f. Never store the fuel container or machine inside where there is an open flame or spark, such as a gas hot water heater, space heater or furnace.
- Escaping hydraulic fluid under pressure can penetrate the skin. If fluid is injected into the skin, seek immediate medical attention. Do not use your hand to check for leaks. Use a piece of cardboard or paper.
- Never run a machine inside a closed area.
- To reduce fire hazard, keep the tractor free of any debris build-up. Clean up oil or fuel spillage.
- Before cleaning, repairing or inspecting, make certain the blades and all moving parts have stopped.
- Check the blade fasteners at frequent intervals for proper tightness. Also visually inspect blades for damage (e.g., excessive wear, bent, cracked). Replace with blades which meet original equipment specifications.

- Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
- Never tamper with safety devices. Check their proper operation regularly.
- After striking a foreign object, stop the engine, and thoroughly inspect the mower for any damage. Repair the damage before restarting and operating the mower.
- Mower blades are sharp and can cut. Wrap the blades or wear gloves, and use extra caution when servicing blades.
- Check brake operation frequently. Adjust and service as required.
- Engine components become hot during operation and can cause a burn. Allow to cool down before touching.
- Do not change the engine governor settings or overspeed the engine. Excessive engine speeds are dangerous.
- Observe proper disposal laws and regulations. Improper disposal of fluids and materials can harm the environment and the ecology.
- Prior to disposal, determine the proper method to dispose of waste from your local Environmental Protection Agency. Recycling centers are established to properly dispose of materials in an environmentally safe fashion.
- Use proper containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them. Properly dispose of the containers immediately following the draining of fluids.
- DO NOT pour oil or other fluids into the ground, down a drain or into a stream, pond, lake or other body of water. Observe Environmental Protection Agency regulations when disposing of oil, fuel, coolant, brake fluid, filters, batteries, tires and other harmful waste.
- We do not recommend the use of a pressure washer or garden hose to clean your unit. They may cause damage to electrical components; spindles; pulleys; bearings; or the engine. The use of water will result in shortened life and reduce serviceability.

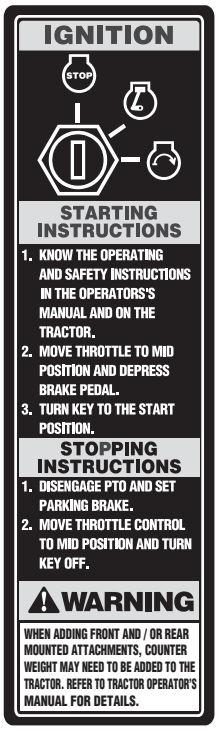
WARNING: - YOUR RESPONSIBILITY: Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine.

SAFETY LABELS

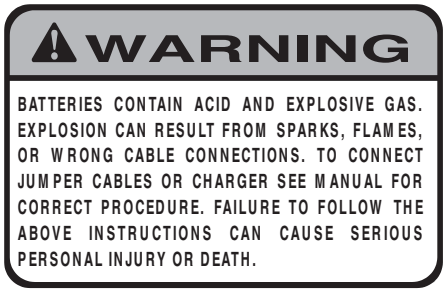

WARNING
AVOID SERIOUS INJURY OR DEATH
1. GO UP AND DOWN SLOPES, NOT ACROSS.
2. AVOID SUDDEN TURNS.
3. DO NOT OPERATE UNIT WHERE IT COULD SLIP OR TIP.
4. IF MACHINE STOPS GOING UPHILL, STOP PTO AND BACK DOWN HILL SLOWLY.
5. DO NOT MOW WHEN CHILDREN OR OTHERS ARE AROUND.
6. DO NOT ALLOW PASSENGERS ON THE TRACTOR AT ANY TIME.
7. LOOK DOWN AND BEHIND BEFORE AND WHILE BACKING.
8. KEEP SAFETY DEVICES [GUARDS, SHIELDS, AND SWITCHES] IN PLACE AND WORKING.
9. REMOVE OBJECTS THAT COULD BE THROWN BY THE BLADES.
10. KNOW LOCATION AND FUNCTION OF ALL CONTROLS.
11. BE SURE THE BLADES AND THE ENGINE ARE STOPPED BEFORE PLACING HANDS OR FEET NEAR BLADES.
12. BEFORE LEAVING OPERATOR'S POSITION, DISENGAGE PTO, ENGAGE BRAKE LOCK, SHUT OFF ENGINE AND REMOVE KEY.
13. SLOW DOWN FOR TURNS, ROUGH GROUND AND SLOPES TO AVOID UPSET.
14. ON PUBLIC ROADS USE SMV EMBLEM AND HAZARD LIGHTS.
READ OPERATOR'S MANUAL

INSTRUCTION / WARNING LABEL ON LEFT RUNNING BOARD

FAN WARNING LABEL LOCATED ON EACH SIDE OF RADIATOR


IGNITION
STOP
STARTING INSTRUCTIONS
1. KNOW THE OPERATING AND SAFETY INSTRUCTIONS IN THE OPERATORS'S MANUAL AND ON THE TRACTOR.
2. MOVE THROTTLE TO MID POSITION AND DEPRESS BRAKE PEDAL.
3. TURN KEY TO THE START POSITION.
STOPPING INSTRUCTIONS
1. DISENGAGE PTO AND SET PARKING BRAKE.
2. MOVE THROTTLE CONTROL TO MID POSITION AND TURN KEY OFF.
WARNING
WHEN ADDING FRONT AND / OR REAR MOUNTED ATTACHMENTS, COUNTER WEIGHT MAY NEED TO BE ADDED TO THE TRACTOR. REFER TO TRACTOR OPERATOR'S MANUAL FOR DETAILS.

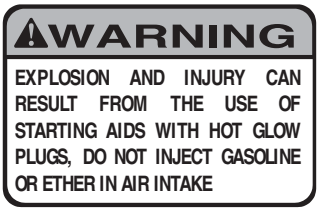
INSTRUCTION LABEL ON RIGHT RUNNING BOARD


WARNING
BATTERIES CONTAIN ACID AND EXPLOSIVE GAS. EXPLOSION CAN RESULT FROM SPARKS, FLAMES, OR WRONG CABLE CONNECTIONS. TO CONNECT JUMPER CABLES OR CHARGER SEE MANUAL FOR CORRECT PROCEDURE. FAILURE TO FOLLOW THE ABOVE INSTRUCTIONS CAN CAUSE SERIOUS PERSONAL INJURY OR DEATH.

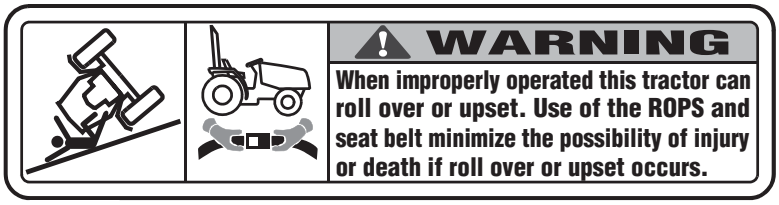
BATTERY WARNING LABEL LOCATED UNDER HOOD

WARNING
• To avoid personal injury, keep PTO shield in place.
• Pull only from draw bar. pulling from any other point can cause rear overturn.
• Disengage PTO and stop engine before servicing tractor, or implements, or attaching or detaching implements.
FAILURE TO FOLLOW ANY OF THE INSTRUCTIONS ABOVE CAN CAUSE SERIOUS INJURY TO THE OPERATOR, OR OTHER PERSONS.

PTO WARNING LABEL LOCATED ON REAR PTO SHIELD


WARNING
EXPLOSION AND INJURY CAN RESULT FROM THE USE OF STARTING AIDS WITH HOT GLOW PLUGS, DO NOT INJECT GASOLINE OR ETHER IN AIR INTAKE

STARTING AID WARNING LABEL LOCATED UNDER HOOD


WARNING
When improperly operated this tractor can roll over or upset. Use of the ROPS and seat belt minimize the possibility of injury or death if roll over or upset occurs.

ROLL OVER WARNING LABEL LOCATED ON RIGHT/REAR FENDER

SECTION 1: CONTROLS AND FEATURES

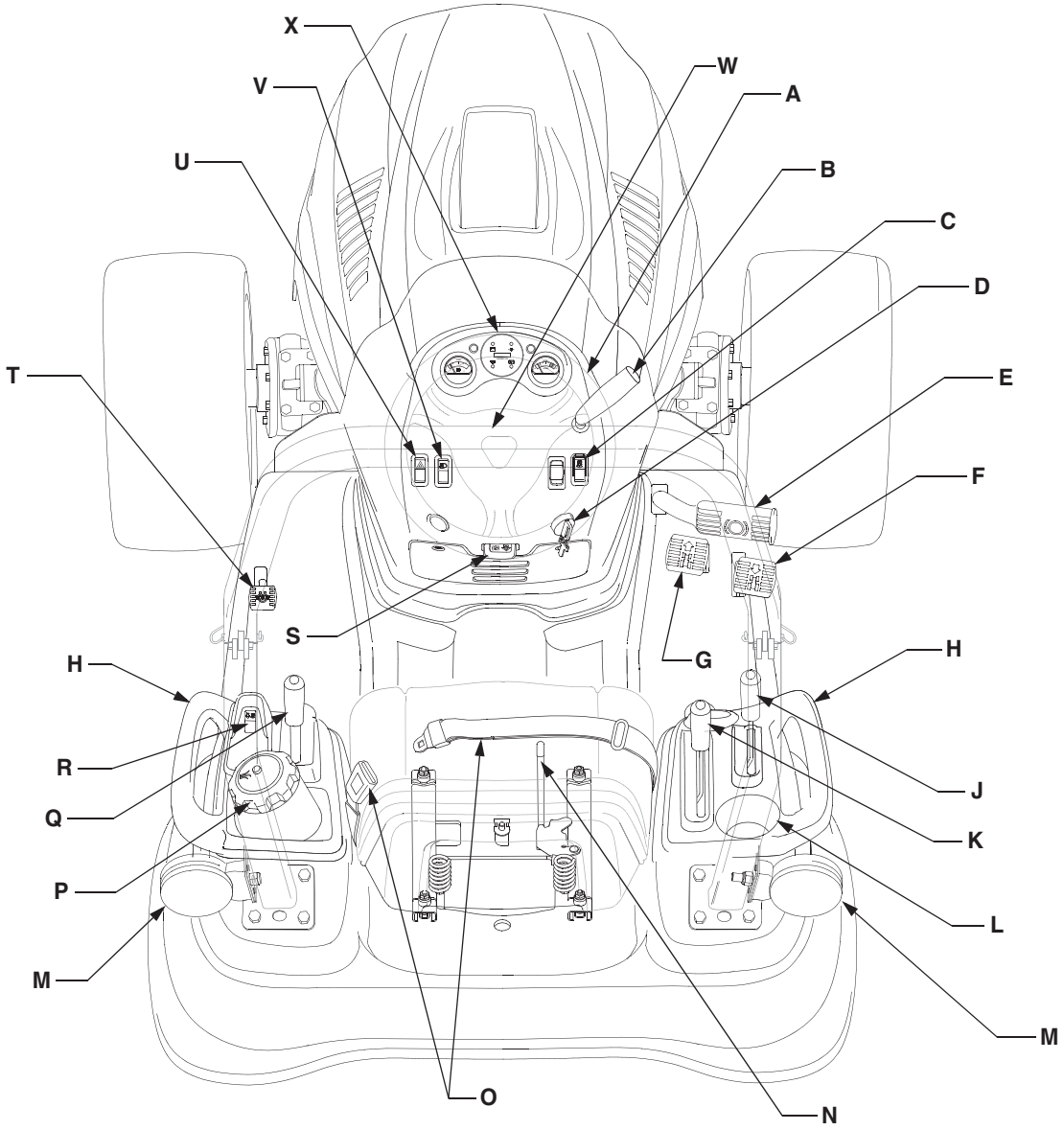


Figure 1

A. Steering Wheel
B. Throttle Handle
C. PTO Switch
D. Ignition Switch
E. Brake Pedal
F. Reverse Pedal
G. Forward Pedal
H. Hand Holds
J. Trans. 4WD Shift Lever
K. Hydraulic Lift Lever
L. Cup Holder
M. Amber Hazzard Light
N. Seat Adjustment Lever
O. Seat Belt
P. Fuel Fill Cap
Q. Trans. Hi/Lo Shift Lever
R. PTO Reverse Override Switch
S. Parking Brake Lever
T. Differential Lock Pedal
U. Hazzard Light Switch
V. Headlight Switch
W. Foldable ROPS
X. Instrument Panel

* Steering Wheel, Seat, and ROPS Transparent for Clarity

NOTE: *References to LEFT and RIGHT indicate that side of the tractor when facing forward while seated in the drivers seat. Reference to FRONT indicates the grille end of the tractor; to REAR, the tow plate end.*

A. Steering Wheel

The steering wheel is centered on the dash panel, and used to change the direction (left or right) of the tractor while driving.

NOTE: *This tractor is equipped with hydraulic power steering. With this feature, the cap and spokes of the steering wheel may change position.*

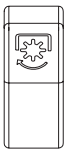
B. Throttle Handle

This symbol indicates the fast position.

This symbol indicates the slow position.

The throttle handle is located to the right of the steering wheel on the dash panel. When set in a given position, a uniform engine speed will be maintained. Rotate the handle rearward to increase the engine speed.

C. PTO Switch



PTO Switch Symbol

Figure 2

The PTO switch is a rocker type switch located to the right of the steering wheel on the dash panel. Push the *top* of the PTO switch downward to engage the PTO. Push the *bottom* of the switch downward to disengage.

D. Ignition Switch

NOTE: *To prevent accidental starting and/or battery discharge, remove the key from the ignition switch when the tractor is not in use.*

The ignition switch has three positions as follow:

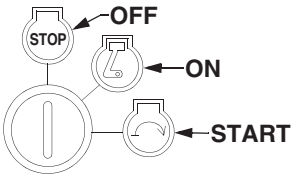


Figure 3

OFF - Engine and electrical system is turned off.

ON - The tractor electrical system is energized.

START - The starter motor will turn over the engine. Release the key immediately when the engine starts

E. Brake Pedal

Brake Pedal Symbol

Figure 4

The brake pedal is located at the front of the right running board above the forward and reverse pedals. Depress to engage the tractor brakes and neutralize the hydrostatic transmission. Fully depress the brake pedal to activate the safety interlock switch when starting the tractor.

F. Reverse Pedal

Reverse Pedal Symbol

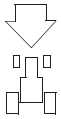


Figure 5

The reverse control pedal is located on the right running board below the brake pedal. Press the pedal down to move in reverse.

WARNING: Check behind the tractor to be sure the area is clear of people, pets or obstacles and use a slower speed to maintain control of the tractor when traveling in reverse.

G. Forward Pedal

Forward Pedal Symbol

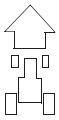


Figure 6

The forward control pedal is located on the right running board below the brake pedal. Slowly press down on the pedal to start moving forward. The forward ground speed of the tractor is directly affected by the distance the pedal is depressed.

H. Hand Holds

Hand holds are built into both the left and right hand fender covers. The handles can be used to assist in mounting and dismounting the tractor.

J. Transmission 4WD Shift Lever

The 4WD shift lever is located on the right fender. This lever is used to engage the transmission drive that powers the front transaxle. Push the lever forward to engage the 4WD, and pull the lever rearward to disengage.

K. Hydraulic Lift Lever

The hydraulic lift lever is located on the right fender. This lever is used to raise and lower the three point hitch lift arms.

- Move the lift lever fully rearward to raise the lift arms.
- Move the lift lever forward to lower the lift arms.
- Move the lift lever fully forward and inward to lock in the float position.

L. Cup Holder

The cup holder is located on the right fender.

M. Amber Hazard Lights

The hazard lights are located on each side of the ROPS. The lights illuminate in a flashing mode when the hazard light switch is turned on. Always use the hazard lights when it is necessary to warn others that the tractor is being operated in the area.

N. Seat Adjustment Lever

The seat adjustment lever is located at the right/ front of the seat. This lever is used to adjust the seat forward or backward.

O. Seat Belt

The seat belt, when properly adjusted and used in conjunction with the Rollover Protective Structure (ROPS), can greatly reduce the risk of serious injury or death to the operator if an accidental tractor overturn occurs.

WARNING: DO NOT use the seat belt if the ROPS structure has been removed from the tractor.

P. Fuel Fill Cap

The fuel fill cap is located on the left fender beside the operator's seat.

Q. Transmission Hi/Lo Range Shift Lever

The Hi/Lo range shift lever is located on the left fender. The lever has two speed range settings and a neutral position. The lever must be shifted into either the high or low range prior to depressing the forward or reverse pedal to drive the tractor.

- Push the lever forward to shift into the high range.
- Pull the lever rearward to shift into the low range.
- Move the lever to the center position to shift into the neutral position.

WARNING: Never attempt to shift the Hi/Lo range lever when the tractor is in motion.

R. PTO Reverse Override Switch

The PTO reverse override switch is located on the left fender. Depress the front of the switch to engage the override which allows the PTO to operate while the tractor is traveling in the reverse direction. ***Once activated, this function remains activated until the ignition switch is turned to the OFF position for a duration of at least 20 seconds,*** regardless of the number of times the PTO is turned off using the PTO switch.

WARNING: Use EXTREME caution when operating PTO driven attachments while traveling in the reverse direction.

S. Parking Brake Lever

Parking Brake Symbol

Figure 7

The parking brake lever is located below the steering wheel in the dash panel. With the brake pedal fully depressed, push the parking brake lever downward and release the brake pedal to lock the parking brake.

T. Differential Lock Pedal

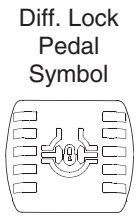


Figure 8

Located at the front of the left running board, the differential lock pedal engages the transmission differential lock.

The differential lock is used to gain additional traction when operating the tractor on wet or loose soil. When the pedal is depressed the rear wheels of the tractor are prevented from rotating independently of one another.

WARNING: When operating with the differential lock engaged, the tractor will be difficult to steer. Do not drive the tractor on roadways or at high speeds with the differential lock engaged.

NOTE: *Disengagement of the differential lock is recommended prior to turning the tractor on grass or other maintained surfaces — tire damage to the turf could occur.*

U. Hazard Light Switch

The hazard light switch is a rocker type switch located to the left of the steering wheel on the dash panel. Push the *top* of the hazard light switch downward to activate the flashing amber lights.

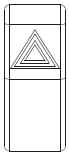


Figure 9

WARNING: Always activate the flashing hazard lights when operating the tractor on, or near, roadways.

V. Headlight Switch

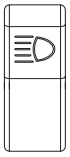


Figure 10

The headlight switch is a rocker type switch located to the left of the steering wheel on the dash panel. Push the *top* of the headlight switch downward to turn on the headlights and instrument panel gauge lights.

W. Foldable ROPS (Rollover Protective Structure)

The ROPS is installed to prevent or reduce injuries to the operator should the tractor accidentally overturn. The foldable feature allows the ROPS to be lowered when operating in areas with low overhead clearance. The protection provided by the ROPS is minimized if the seat belt is not used, and is eliminated when in the folded position.

X. Instrument Panel

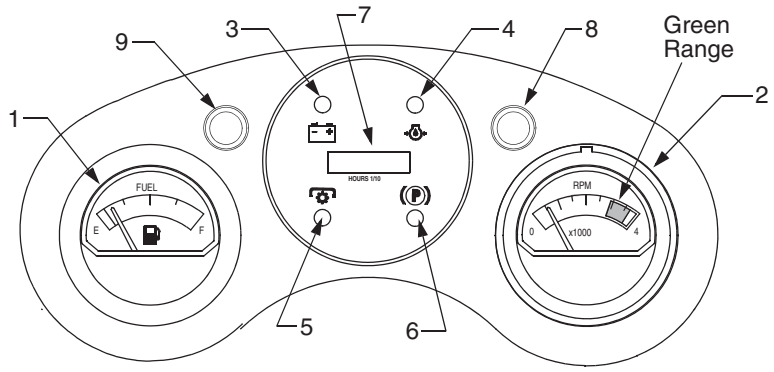


Figure 11

1. Fuel Gauge

The fuel gauge monitors the fuel level in the fuel tank. The needle pointing to the right indicates a full tank. The ignition switch must be in the ON position to activate the fuel gauge.

2. Tachometer

The tachometer shows the engine speed in revolutions per minute (RPM). Optimal engine operating speed is approximately 3000-3500 RPM. When operating PTO driven attachments the RPM indicator needle should be within the green range on the tachometer dial.

3. Battery Indicator Light

- Bulb illuminates and battery voltage is displayed briefly when the ignition switch it turned to the "ON" position.
- Illuminates to indicate the battery voltage has dropped below 11.5 (+0.5/-1.0) DC volts. The battery voltage is also displayed on the hour meter. If this indicator and display come on during operation, check the battery and charging system for possible causes and/or contact your Cub Cadet dealer.

4. Oil Pressure Indicator

This warning lamp indicates low engine oil pressure. If this indicator illuminates, stop the tractor immediately and check the engine oil level. If the oil level is within the operating range, but the light remains on, contact your *Cub Cadet* dealer. **NOTE:** *The oil pressure indicator may illuminate when the key switch is turned to the on position, but should turn off when the engine is started*.

5. PTO Engaged Indicator

This indicator illuminates whenever the PTO switch is pulled upward in the "ENGAGED" position while the key switch is turned to the "ON" position. Check this indicator if the engine will not crank with the key switch in the "START" position—the indicator should ***not*** be illuminated. If necessary, move the PTO switch to the "DISENGAGED" position.

6. Brake Engaged Indicator

This indicator illuminates whenever the brake pedal is fully depressed or the parking brake is engaged and the key switch is turned to the "ON" position. Check this indicator if the engine will not crank when the key switch is turned to the "START" position—the indicator should be illuminated. If necessary, fully depress the brake pedal.

7. Hour Meter/Battery Display

The hour meter records the hours and tenths of an hour (*right* most digit) that the tractor has been operated.

- The hour meter is activated when the key switch is turned to the “ON” switch position. Because the key switch may be accidentally left in the "ON" position, a record of the actual hours of operation should be kept to assure maintenance procedures are completed according to the schedule in this manual.
- When the key switch is turned to the "ON" position, the battery indicator light briefly illuminates and the battery voltage is briefly displayed. The display then changes to the accumulated hours.

8. Engine Coolant Temperature Light

Illumination of this warning lamp indicates the engine coolant temperature has risen above the prescribed operating range. If the light comes on while operating the tractor, eliminate all loads and try cooling the engine by running at mid throttle for a few minutes. Stop the engine and allow to cool; then check for possible causes (e.g. low coolant level, plugged radiator screen).

9. Glow Plug Indicator Light

Illuminates when the ignition switch is turned to the ON position. The light remains lit for a preset time while the glow plugs heat the precombustion chambers of the diesel engine.

SECTION 2: OPERATION

ROLLOVER PROTECTIVE STRUCTURE (ROPS)

This tractor is equipped with a foldable Rollover Protection Structure (ROPS) and seat belts. When used together they are effective in reducing injuries to the operator in the event of an accidental tractor rollover. The safety provided by the ROPS is minimized if the seat belt is not properly adjusted AND buckled. Refer to **ADJUSTMENTS** for seat belt adjustment.

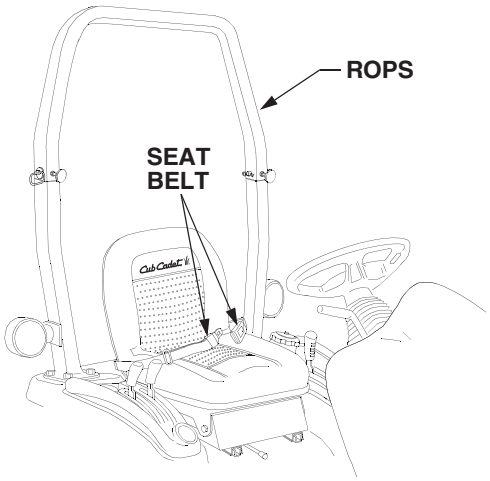


Figure 12

WARNING: Always wear the seat belt when operating the tractor equipped with a ROPS. However, if the ROPS has been removed, the seat belt must not be used.

Use the following guidelines when using a tractor equipped with a ROPS:

- Be aware of overhead clearances in area of operation. Check for clearance of door openings and other overhead objects such as utility lines and tree branches. Overhead objects could catch the ROPS and upset the tractor.
- Do not modify the ROPS by drilling holes for, or welding accessories to the structure.
- Do not use the ROPS to pull objects with the tractor. Use ONLY the tractor rear tow plate for pulling.
- In the event of an accident, have the ROPS carefully inspected and, if necessary, replaced by your *Cub Cadet* dealer. Do not attempt to repair the ROPS.

FOLDING THE ROPS

The foldable ROPS feature allows the operator to quickly lower the ROPS to operate in areas where there is low overhead clearance. However, the ROPS should be used in the lowered position only when absolutely necessary. Operate with the ROPS in the 'up' position whenever possible.

WARNING: A folded ROPS does not provide rollover protection. When the ROPS is in the folded position, the seat belt must NOT be used.

Reposition the ROPS as follows:

- Loosen the two clamp knobs on the front of the ROPS to relieve their pressure on the ROPS. See Figure 13.
- Remove the two internal cotter pins, and, while supporting the ROPS, withdraw the hitch pins. See Figure 13. Carefully lower the ROPS.
- Reinstall the hitch pins and internal cotter pins for storage.

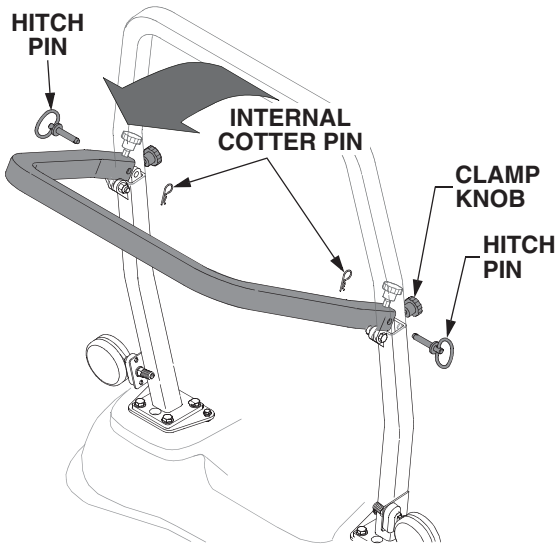


Figure 13

To raise the ROPS:

- Remove internal cotter pins and hitch pins and lift the ROPS into position.
- Insert the hitch pins and secure with the internal cotter pins.
- Tighten the clamp knobs against the ROPS.

SAFETY INTERLOCK SYSTEM

This tractor is equipped with a safety interlock system for the protection of the operator. If the interlock system should ever malfunction, do not operate the tractor. Contact your authorized *Cub Cadet* Dealer. The safety interlock system prevents the engine from cranking or starting unless the brake pedal is fully depressed, and the PTO is "OFF".

- The safety interlock system will shut off the engine if the operator leaves the seat before engaging the parking brake.
- The safety interlock system will shut off the engine if the operator leaves the seat with the PTO "ON", regardless of whether the brake

lock is engaged. **NOTE:** *The PTO switch must be moved to the "OFF" position to restart the engine.*

- The safety interlock system will shut off the PTO if the *reverse control pedal* is depressed, unless the reverse override function is activated. **NOTE***: If the reverse override function has been activated, it will remain activated until the ignition switch is turned to the "OFF" position for a 20 second duration.*

FUELING THE TRACTOR

Fill the fuel tank with only clean, fresh, diesel fuel with a minimum cetane number of 40. To ensure the freshness of the fuel, purchase fuel in a quantity that can be used within 30 days.

NOTE: *DO NOT USE KEROSENE OR GASOLINE in your diesel engine. Damage to the engine will occur.*

Generally a good grade Number Two Diesel Fuel should be used in your diesel engine. In extremely cold temperatures a quality Number One Diesel Fuel, or a blend of the two, should be used. In most areas, diesel fuel is properly blended for seasonal use as ambient temperatures change. Therefore, it is important to monitor fuel purchases so that seasonal grade fuels are not carried over after the average ambient temperature has changed.

WARNING: Never fill the fuel tank to the top of the filler neck. Expansion could result in overflow through the vents in the cap, allowing fuel to come in contact with the operator.

- Do not smoke while refueling the tractor.
- Do not fill the fuel tank when the engine is running or while the engine is hot.
- The fuel fill cap is located on the fender to the left of the seat. Unscrew the fuel cap and fill tank from an approved container. Do not fill the fuel tank to capacity. Allow room for expansion.
- Tighten the fuel cap securely, and immediately wipe up any spilled fuel.
- To minimize condensation, keep the fuel tank as full as possible without filling to capacity. It is a good practice to fill the fuel tank at the end of the day to reduce overnight condensation.
- Do not allow the fuel tank to run dry. Running out of fuel requires bleeding air and repriming the fuel system.

WARNING: Fuel in the engine injection system is under high pressure. If not a qualified mechanic, do not attempt to service the fuel injection system. Do not use your hand to check for leaks.

NEW TRACTOR BREAK-IN PROCEDURES

Proper care in the first hours of operation will help to assure optimal performance of your new tractor.

- Never operate a new engine immediately under full load. Allow the engine to warm up.
- Avoid operating the engine for prolonged periods at either high or low speed with no load.
- Use the transmission's low speed range for heavy loads to avoid lugging, or stalling, of the engine due to overload.
- Closely monitor the engine oil and keep filled to the recommended level.
- After the first ten hours of operation, check the front and rear wheel lug nuts. If necessary, re-torque the lug nuts to 60-70 ft. lbs.
- Perform all break-in maintenance procedures found in the MAINTENANCE section.

STARTING THE ENGINE

WARNING: Always sit in the operator's seat when starting the tractor, Never attempt to start the engine while standing beside the tractor.

WARNING: Never use starting fluids, such as ether, as a starting aid. Severe engine damage or fire could result.

- Operator must be sitting in the tractor seat.
- Move the throttle handle to approximately the "SLOW" throttle position. Refer to Figure 14.
- Make sure the PTO switch is in the "OFF" position. *Note: The PTO light on instrument panel will flash if switch is in ON position.*

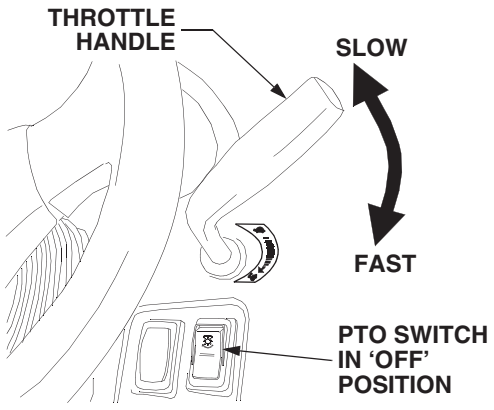


Figure 14

- Either fully depress and hold the brake pedal or engage the parking brake. **NOTE:** *The parking brake indicator on instrument panel will illuminate if pedal is not depressed.*

- Turn the ignition key clockwise to the "RUN-PREHEAT" position, and observe the glow plug indicator light on the instrument panel. Wait until the glow plug indicator light turns off before cranking the engine.
  NOTE: *Preheating may not be necessary if the engine has been running and is warm*.
- Turn the ignition key to the “START” position and release it as soon as the engine starts; however, do not crank the engine continuously for more than 30 seconds at a time. If the engine does not start within this time, turn the key to “OFF” and wait at least one minute to allow the engine’s starter motor to cool. Try again after waiting.
- After the engine has started, allow the engine to run for approximately three to five minutes at low throttle before putting the engine under load.
- Observe the instrument panel. If the battery indicator light, oil pressure light, or coolant temperature light comes on, immediately stop the engine. Have the tractor inspected by your *Cub Cadet* dealer.

COLD WEATHER STARTING (BELOW 14° F)

Move the throttle handle to approximately the "FAST" throttle position, then follow the normal engine starting instructions above.

NOTE: *An optional engine coolant heater is available from your Cub Cadet dealer. This heater will aid in starting the tractor when ambient temperatures fall below 10°F (-12°C).*

USING JUMPER CABLES TO START ENGINE

WARNING: Batteries contain sulfuric acid and produce explosive gasses. Make certain the area is well ventilated, wear gloves and eye protection, and avoid sparks or flames near the battery.

If the battery charge is not sufficient to crank the engine, recharge the battery. If a battery charger is unavailable and the tractor must be started, the aid of a booster battery will be necessary. Connect the booster battery as follows:

- Connect the end of one cable to the disabled tractor battery’s positive terminal; then connect the other end of that cable to the booster battery’s positive terminal.
- Connect one end of the other cable to the booster battery’s negative terminal.
- Connect the other end of that cable to the frame of the disabled tractor, as far from the battery as possible.
- Start the disabled tractor following the normal starting instructions previously provided; then disconnect the jumper cables in the exact reverse order of their connection.
- Have the tractor’s electrical system checked and repaired as soon as possible to eliminate the need for jump starting.

STOPPING THE ENGINE

- Place the PTO switch in the “OFF” position.
- Place the throttle control lever in the “SLOW” position and allow the engine to idle for about one minute.
- Turn the ignition key to the “OFF” position and remove the key from the ignition switch.

NOTE: *Always remove the key from the ignition switch to prevent accidental starting or battery discharge if the equipment is left unattended.*

DRIVING THE TRACTOR

WARNING: Avoid sudden starts, excessive speed and sudden stops.

WARNING: Do not leave the seat of the tractor without disengaging the PTO and engaging the parking brake. If leaving the tractor unattended, turn the ignition key off and remove key.

- Adjust the operator’s seat to the most comfortable position that allows you to operate all controls and pedals. See seat adjustment in the **ADJUSTMENTS** section.

WARNING: DO NOT use the seat belt if the ROPS is in the folded position or has been removed from the tractor.

- Adjust the seat belt to fit snugly but comfortably around your lap, then buckle the seat belt. Refer to **ADJUSTMENTS** section.
- Shift the transmission Hi/Lo range shift lever on the left fender to the desired speed setting. Refer to **USING THE HI/LO RANGE SHIFT LEVER** in sub-section below.
- Use the tractor and/or auxiliary hydraulic lift lever(s) to raise all tractor attachments from the ground if transporting the tractor to a work site.
- Depress the brake pedal to release the parking brake, then slowly release the brake pedal.
- Move the throttle handle to the position where the engine operates best for the load to be handled (normally 3000-3500 RPM).
- Slowly depress either the forward or reverse pedal to move the tractor in the desired direction. Refer to **USING THE FORWARD and REVERSE PEDALS** in paragraphs below.

STOPPING THE TRACTOR

- Fully depress the brake pedal to bring the tractor to a complete stop. Push downward on the parking brake lever and release the pedal to engage the parking brake. Refer to Figure 15.
- Depress the rear of the PTO switch to disengage the PTO.
- Place the throttle control lever in the “SLOW” position and allow the engine to idle for about one minute.
- Turn the ignition switch to “OFF”” and remove the key from the switch before dismounting.
- Depress the button in the center of the seat belt buckle to release the seat belt.

USING THE FORWARD AND REVERSE PEDALS

The hydrostatic transmission provides constantly variable ground speeds within the speed rating of each transmission range. The tractor speed is controlled by the forward and reverse pedals on the front of the *right* running board.

The forward and reverse pedals are self neutralizing. The transmission and pedals return to neutral when the pedals are released and the tractor will slow to a stop. **NOTE:** *Use the brake pedal to stop the tractor.*

- To move forward, slowly depress the forward control pedal (See Figure 15) until the desired speed is achieved. The speed of the tractor is directly related to the distance the pedal is depressed.

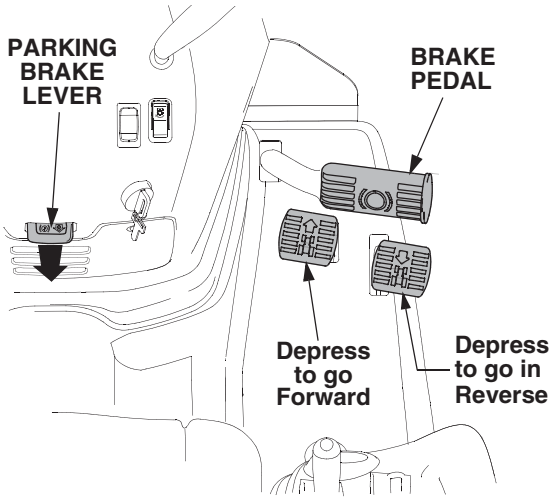


Figure 15

- To move in reverse, check that the area behind is clear then slowly depress the reverse control pedal. See Figure 15.

IMPORTANT: *Do not use the forward or reverse control pedals to change the direction of travel when the tractor is in motion. The abrupt direction change may unseat the operator and will cause premature wear in the transmission. Allow the tractor to stop before changing directions.*

USING THE HI/LO RANGE SHIFT LEVER

WARNING: The tractor must be stopped before engaging or disengaging the transmission Hi/Lo range shift lever. Shifting while the tractor is in motion will cause damage to the transmission.

WARNING: Always maintain a tractor speed that allows for complete control and stability of the machine. Be aware of dangerous areas or conditions.

Referring to Figure 16, pull the lever to the right side of the slot to clear the shift gate, then shift the lever as follows :

HI range — Shift the lever fully forward in slot.
Forward speed 0 to 8.0 mph.
Reverse speed 0 to 4.0 mph.
Hi range is normally used for transport and can be used with some tractor attachments

LOW range — Shift the lever fully rearward in slot.
Forward speed 0 to 4.0 mph.
Reverse speed 0 to 2.0 mph.
Low range is recommended for use with most PTO driven tractor attachments. **Low range must be used when climbing or descending slopes**.

NEUTRAL — Shift the lever to the center of slot. Disengages the transmission drive.
Use ONLY for towing or moving the tractor when not under power.

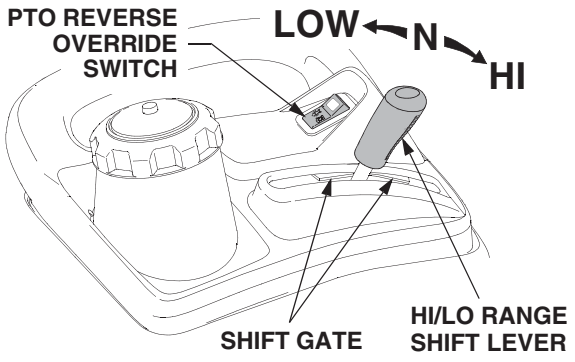


Figure 16

DRIVING ON SLOPES

WARNING: Do not operate on inclines with a slope in excess of 15 degrees (a rise of approximately 2-1/2 feet every 10 feet). The tractor could overturn and cause serious injury.

IMPORTANT: ***Always shift into LOW speed range before beginning to climb or descend a slop*****e. Shift into 4WD when descending a slope.**

Operate the tractor up and down slopes, never across slopes. Do not drive so that the tractor may tip over sideways

Before operating the tractor on a slope, walk the slope to look for possible hazards such as rocks, mounds, stumps, or surface irregularities which could cause the tractor to be upset.

Back the tractor with attachment up the steepest portion of each slope you intend to work. If the tractor cannot negotiate the slope in reverse, the slope is too steep to be worked.

Avoid turns when driving on a slope. If a turn must be made, turn down the slope. Turning up a slope greatly increases the chance of a roll over.

Avoid stopping when driving up a slope. If it is necessary to stop while driving up a slope, start up smoothly and carefully to reduce the possibility of flipping the tractor over backward.

USING THE DIFFERENTIAL LOCK PEDAL

Depressing the differential lock pedal engages a mechanism in the transmission that locks the differential. This prevents the rear wheels from rotating independently of each other and provides constant power to both rear wheels when additional traction is needed.

IMPORTANT: ***Do not engage the differential lock when one of the rear wheels is rotating. Stop the wheel rotation and then engage the differential lock.***

WARNING: When operating with the differential lock engaged, the tractor will be difficult to steer. Do not drive the tractor on roadways or at high speeds with the differential lock engaged.

- Fully depress and hold the differential lock pedal to engage the transmission differential lock. Release the pedal to disengage the differential lock. Refer to Figure 17.

NOTE: *Because of the drive load on the internal engagement mechanism, releasing the differential lock pedal may not always disengage the differential lock. It may be necessary to slow the tractor, or reverse the direction of travel, to disengage the differential lock.*

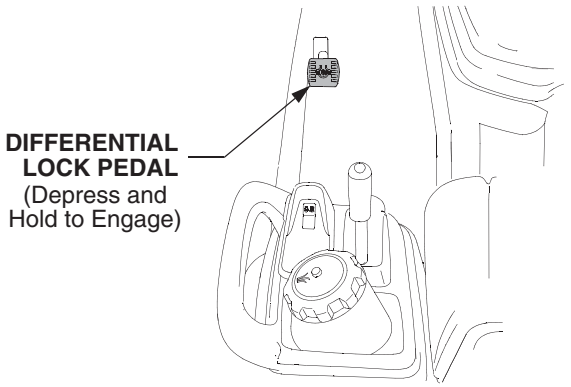


Figure 17

USING THE 4WD SHIFT LEVER

WARNING: The tractor should be stopped before engaging or disengaging the four wheel drive. Shifting while the tractor is in motion can cause damage to the transmission.

IMPORTANT: ***To prevent possible damage to the tractor transmission, engage the 4WD only when additional traction is needed while operating in loose soil or on slippery surfaces (e.g. mud, snow), or when descending a slope. Disengage the 4WD when operating on firm, flat surfaces or when operating at high speeds.***

Use the 4WD shift lever to engage or disengage the drive to the front axle.

- Stop the tractor; push the lever to the right of the slot to clear the shift gate; then shift forward to engage the four wheel drive. See Figure 18.
- Stop the tractor; push the lever to the right of the slot to clear the gate; then shift the lever rearward to disengage the four wheel drive.

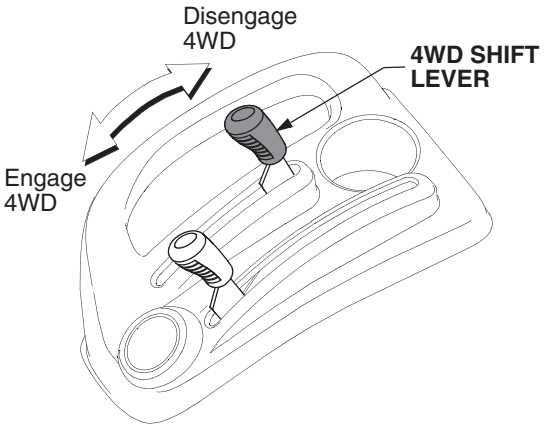


Figure 18

USING THE HYDRAULIC LIFT LEVER

The hydraulic lift system provides power for raising and positioning three point hitch and belly mounted equipment. To raise an attachment using the hydraulic lift system, the engine must be running. Generally, an attachment can be lowered with the engine running or off.

- Move the lift lever forward in the slot to lower the equipment to the desired height setting. Refer to Figure 19.
- Move the lift lever rearward in the slot to raise the equipment.
- Move the lift lever fully forward and to the right ahead of the float lock gate to lock the lift in the float position.

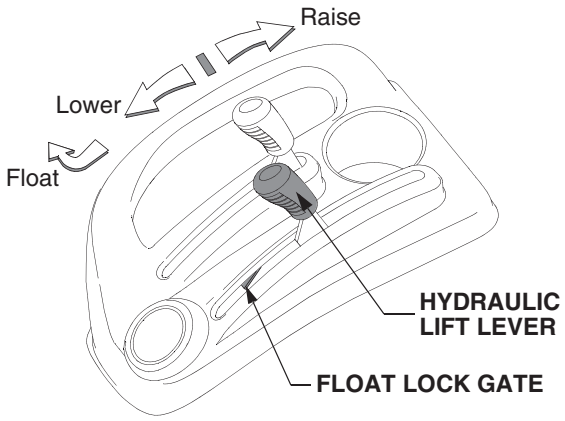


Figure 19

ENGAGING THE PTO

WARNING: The operator must be in the seat at all times when the PTO is engaged. If the operator should leave the seat without turning off the PTO switch, the tractor's engine will shut off.

- Move the throttle handle to the mid throttle position. See Figure 20.
- Push the *top* of the PTO switch downward to engage the PTO (See Figure 20). The PTO light on the instrument panel will come on.
- Move the throttle handle to the full throttle position. When operating PTO driven attachments, observe the tachometer on the instrument panel to ensure the RPM indicator needle is within the green range on the tachometer dial.
- Push the *bottom* of the switch downward to disengage the PTO.

IMPORTANT: ***Normally the PTO will not operate when the tractor is driven in the reverse direction. The PTO reverse override switch must be activated to operate the PTO while traveling in reverse.***

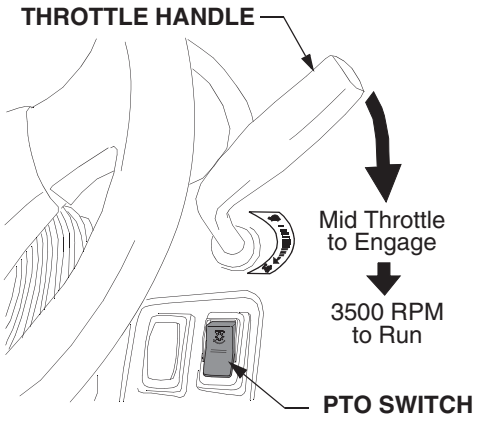


Figure 20

USING THE PTO REVERSE OVERRIDE SWITCH

The PTO reverse override switch, located on the *left* fender, allows the PTO to operate while the tractor is traveling in the reverse direction. Refer to Figure 16.

- The PTO should first be engaged using the PTO switch on the dash panel.
- Depress the front of the override switch to activate the reverse override system. The light in the override switch will come on.

IMPORTANT: ***Once activated, the reverse override will remain activated until the ignition switch is turned to the OFF position. If the override switch is illuminated, the system is activated.***

WARNING: Use EXTREME CAUTION when operating PTO driven attachments while traveling in the reverse direction.

LIGHTING

Headlights

Always use the headlights for after dusk and pre-dawn operation of the tractor. The lights not only illuminate the work area, but also increase the visibility of the tractor for anyone who might enter the area of operation.

- To turn on the headlights, depress the top end of the headlight switch located to the left of the steering wheel.
- To turn off the headlights, depress the bottom of the light switch.

Use of the headlights, along with a SMV (Slow Moving Vehicle) emblem, is also recommended when operating the tractor on or near roadways to increase visibility to traffic.

Hazard Lights

Always use the flashing amber hazard lights along with the SMV (Slow Moving Vehicle) emblem when operating the tractor on, or near, roadways. Also activate the hazard lights when necessary to warn others that the tractor is being operated in the area.

- To turn on the flashing hazard lights, depress the top end of the hazard light switch located to the left of the headlight switch.
- To turn off the hazard lights, depress the bottom of the light switch.

USING THE TOP LINK RETAINER HOOK

The top link hook is provided to retain the top link of the three point hitch when not in use.

To utilize the top link hook, proceed as follows:

- Raise the 3-pt. hitch top link fully upward.
- Pivot the link hook from its storage position to the center and lower the top link into the hook of the rod. See Figure 21.

IMPORTANT: ***When using the three point hitch, the retainer hook must be pivoted fully rearward to avoid interference with the top link.***

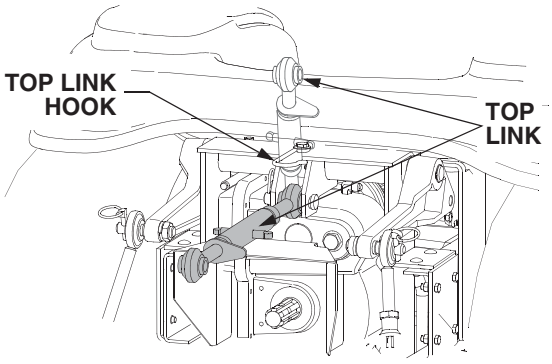


Figure 21

REMOVING THE REAR PTO COVER

The rear PTO cover is a safety feature designed to prevent items from accidentally being caught by the rotating shaft. The cover should be removed only when the rear PTO is being utilized.

To remove and reinstall cover, proceed as follows:

- Loosen the two screws on the left side of the cover. Refer to Figure 22.
- Slide the cover to the right until the slots of the cover are free of the screws and pull the cover off. Refer to Figure 22.
- When finished using the rear PTO, slide the cover fully onto the shaft; then slide the cover to the left until the slots are underneath the screw heads. Tighten the screws to secure the cover. Refer to Figure 22.

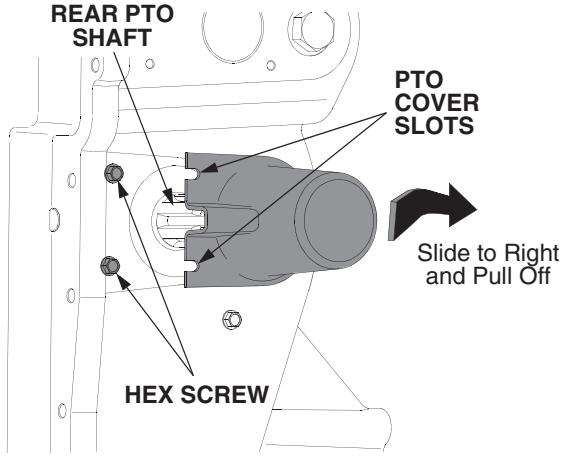


Figure 22

USING THE THREE POINT HITCH

WARNING: Always disengage the PTO, stop the engine, and set the parking brake before dismounting the tractor to connect, disconnect, or adjust three point hitch mounted implements.

Use the rear three point hitch system to attach three point mounted implements, which are normally driven by the rear PTO. Use the tractor's hydraulic lift system to raise and lower the three point hitch and set the height position of the implement.

Refer to the **ADJUSTMENTS** section for instructions on adjusting the RH adjustable lift link, top hitch link, and hitch chains. See Figure 23.

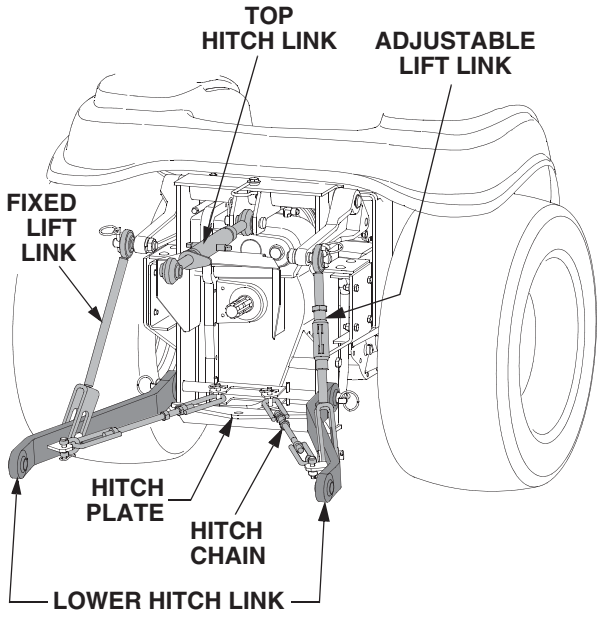


Figure 23

USING THE HITCH PLATE

Use only the hitch plate (Refer to Figure 23), for towing pull-behind equipment (carts, trailers, etc.) or dragging loads.

Raise the lower links of the three point hitch to their highest position to prevent interference with the towed equipment.

IMPORTANT: ***When transporting pull-behind equipment on public roadways, always use a safety chain to supplement the connection between the tractor and towed equipment. The safety chain must have a strength rating equal to or greater than the gross weight of the equipment being towed.***

TRACTOR WEIGHTING

When implements are installed on either the front or rear of the tractor, the normal balance of the tractor is altered.

- As a rear mounted implement is raised to the transport position, the balance point of the tractor shifts rearward, which may result in a loss of steering control and tractor stability.
- When a front mounted implement is raised, the balance point shifts forward and may result in a loss of traction and stability.

To counterbalance these weight shifts, weight should be added to the tractor in the form of either front cast iron weights, a rear weight box, and/or liquid tire ballast. Only enough weight should be added to obtain good traction, control, and stability. Excessive weight will unnecessarily load down the tractor's engine and transmission.

INSTALL **ONLY** EQUIPMENT APPROVED FOR USE ON THE 5000 SERIES TRACTOR.

Front Weights

To counterbalance three point hitch mounted equipment, a weight bracket/bumper kit and cast iron weights are available from your *Cub Cadet* dealer. Refer to the Weighting Table for the proper ballast to be added to the front of the tractor.

Weighting the Rear of the Tractor

To counterbalance front mounted equipment, use a rear weight box, and/or liquid ballast in the rear tires. Refer to the Weighting Table for the proper ballast to be added to the rear of the tractor.

NOTE: *Consult with your Cub Cadet dealer about having liquid ballast added to your tires, and for any special maintenance after the procedure is performed. Because special equipment and a familiarity with the practice is required, only a qualified tire technician should perform this procedure.*

TRACTOR WEIGHTING TABLE

Equipment Installed on Tractor	Method of Weighting	Weight Required
Front Loader	Rear Weight Box AND Ballast Added to Rear Tires	400 pounds in weight box (** with center of gravity approx. 33" from center of rear axle and 20" above ground-See note below) AND a 86 pounds of liquid ballast added to each rear tire.
Front Loader and Appoved Rear Mounted Equipment	Ballast Added to Rear Tires	86 pounds of liquid ballast added to each rear tire
Rear Mounted Finish Mower	Front Weight Bracket and Suitcase Weights	A minimum of four suitcase weights (168 pounds)
Rear Mounted Tiller	Front Weight Bracket and Suitcase Weights	A minimum of two suitcase weights (84 pounds)
Rear Mounted Blade, Box Blade, Rake	Front Weight Bracket and Suitcase Weights	A minimum of two suitcase weights (84 pounds)
Rear Mounted Post Hole Digger	Front Weight Bracket and Suitcase Weights	A minimum of four suitcase weights (168 pounds)
Front Snow Thrower	None Required	None Required
Front Blade	None Required	None Required

** If the center of gravity of the additional weight is positioned closer to the rear axle and higher above the ground, more weigth must be added. If the additional weight is carried farther from the axle and lower, less weight may be used.

SECTION 3: ADJUSTMENTS

ADJUSTING THE SEAT

For the comfort of the operator, a single lever adjustable seat is provided to set the fore to aft position of the seat. Adjust the seat to the most comfortable position that allows you to operate all controls and pedals.

WARNING: Do not adjust the seat when the tractor is moving, as this could cause the operator to lose momentary control of the tractor and result in an accident.

- To adjust the seat, pivot the seat adjustment lever to the left and hold while repositioning the seat to the desired position.
- After repositioning the seat, release the lever to lock the seat in position. Slide the seat either slightly forward or rearward to assure it is locked, or until engagement of the lock is felt. See Figure 24.

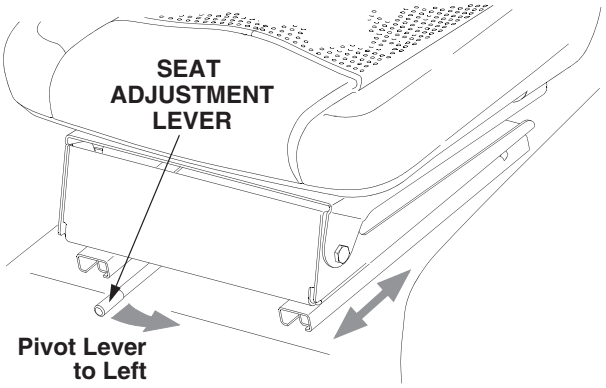


Figure 24

ADJUSTING THE SEAT BELT

WARNING: Always wear the seat belt when operating the tractor equipped with a ROPS. If the ROPS has been lowered or removed, the seat belt should not be used.

NOTE: *If the belt is too long or too short to be properly adjusted using the upper belt webbing, the adjustment clip should be repositioned. To do so, firmly grasp the adjustment clip and pull the lower webbing though the clip. Move the clip toward the anchor point at the seat to shorten the belt, or toward the buckle link the lengthen the belt.*

Adjust the final length of the seat belt using the adjuster clip, buckle link, and upper belt webbing on the *right* half of the belt.

- To lengthen the belt, hold the ends of the adjuster clip and tip upward the side of the clip toward the buckle link. See Figure 25.
- While holding the clip, pull the upper webbing of the belt through the clip toward the buckle link. See Figure 25.
- Hold the belt and pull the buckle link to the *left* to remove the slack in the upper webbing of the belt between the adjuster clip and the link.

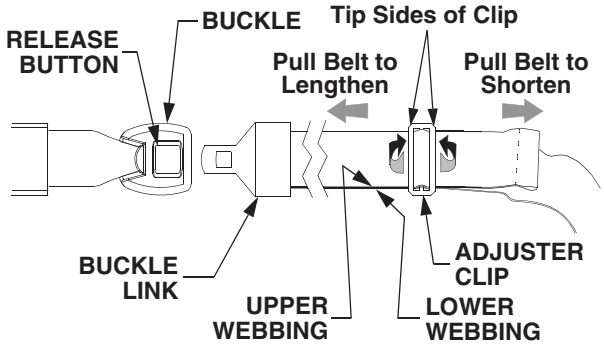


Figure 25

- To shorten the belt, tip the other side of the clip upward, pull the free end of the belt webbing to the *right*, and pull the buckle link to the *left* to remove the slack.

THREE POINT HITCH ADJUSTMENTS

- Adjust the RH adjustable lift link to *level* the lower hitch links. Loosen the jam nut and turn the adjustment tube as shown in Figure 26 to shorten or lengthen the lift link. Tighten the jam nut against the adjustment tube after adjusting.

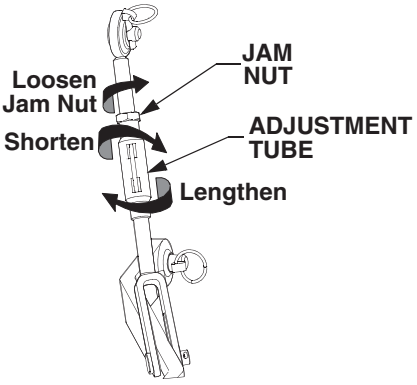


Figure 26

- The length of the upper hitch link is normally determined by the design of each implement. To adjust the upper hitch link, loosen the locking lever and turn the adjustment tube as shown in Figure 27. After the appropriate length is attained, tighten the locking lever. If correctly adjusted, the upper hitch link will be parallel or nearly parallel to the lower hitch links.

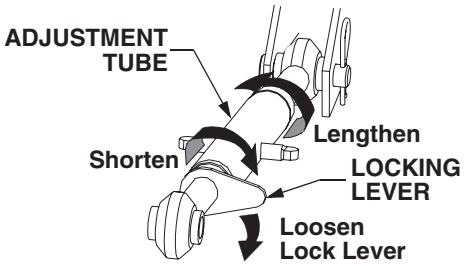


Figure 27

- The length of the hitch chains limit the side-to-side movement of the hitch lower links. To adjust the length of the hitch chains, loosen the jam nut and turn the hex collar on the adjustment rod as shown in Figure 28. Tighten the jam nut after adjusting.

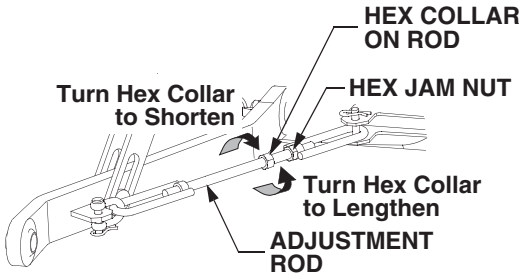


Figure 28

ADJUSTING FRONT WHEEL TOE-IN

The front wheel toe-in is set at the factory and should maintain the proper setting. However, the toe-in should be checked periodically and readjusted if necessary.

CHECK THE TOE-IN AS FOLLOWS:

- Place the tractor on a level surface with the wheels in the straight ahead position.
- Place an easily visible mark on the center lines of both front tires at the horizontal center line of the wheel.
- Measure and record the distance 'A' between the two marks. See Figure 29.
- Roll the tractor forward or rearward until the marks are at the horizontal center line at the rear of the wheels. Measure and record the distance 'B' between the marks. See Figure 29.
- Distance 'A' should be 1/8"-1/4" less than distance 'B' if the toe-in is correct. If it is not, readjust the toe-in.

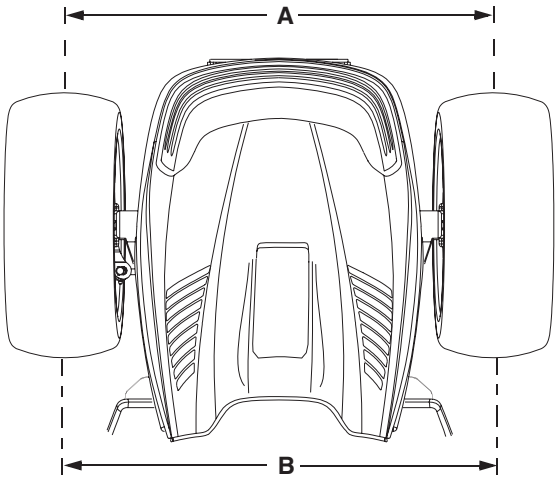


Figure 29

READJUST THE TOE-IN AS FOLLOWS:

NOTE: *The right ball joint and jam nut are left hand threaded.*

- Loosen the jam nuts at both the LH and RH ball joints. Refer to Figure 30.
- Slide an open-end wrench onto the flat area at either end of the tie rod and turn the tie rod as follows:

  Rearward to shorten the tie rod and decrease the toe-in. See Figure 30.

  Forward to lengthen the tie rod and increase the toe-in. See Figure 30.

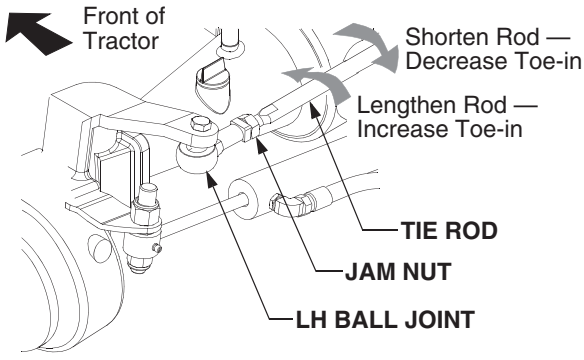


Figure 30

- Readjust the tie rod as necessary to obtain the correct toe-in, then tighten the jam nuts against the ball joints.

ADJUSTING THE BRAKES

The tractor brakes are adjusted at the factory and should experience minimal wear if the tractor is operated normally. However, all brake pads are subject to wear and at some point the brake linkage may have to be adjusted.

Check the brakes as follows:

- Place the tractor on a level surface. Stop the tractor engine.
- From beneath the RH running board, remove the internal cotter pin to disengage the brake rod ferrule from the brake pedal. Position the brake rod to make certain there is no pull on the brake actuator arm. See Figure 31.
- From the rear of the tractor, use a feeler gauge to measure the gap between the outer brake puck and the brake disc. The gap should measure between .012 and .015". See Figure 31.
- If the gap is greater than .015", tighten the hex nut on the brake assembly until the gap is within the tolerance.
- Position the ferrule to align with the hole in the brake pedal. If the ferrule does not align with the hole, loosen the jam nut by turning it away from the ferrule
- Adjust the ferrule on the brake rod to align with the brake pedal hole, then tighten the jam nut against the ferrule.
- Insert the ferrule in the brake pedal and secure with the internal cotter pin.
- Repeat the previous steps to check and, if necessary, adjust the LH brake assembly.

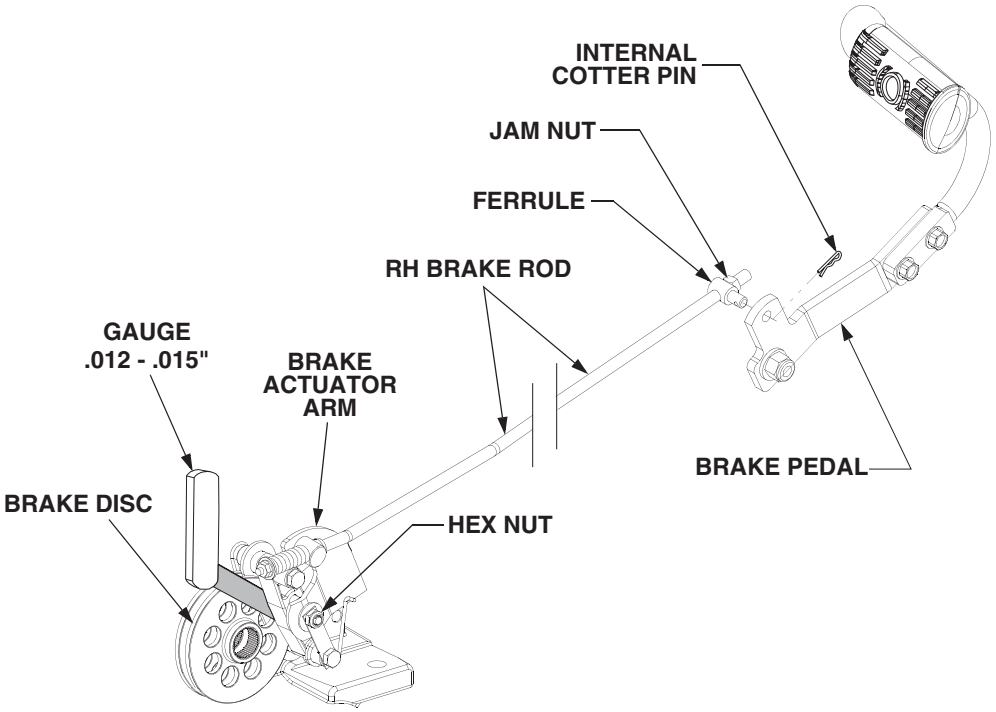


Figure 31

SECTION 4: MAINTENANCE

The service life and reliability of any machine depends upon the care it is given. Proper lubrication and maintenance is a vital part of that care. Using the *Lubrication and Maintenance Chart* as a guide, monitor the hourmeter on the instrument panel to ensure the required maintenance procedures are performed. The maintenance schedule reflects the minimal requirements to maintain the equipment. More frequent inspections and maintenance is preferable.

Make certain that all lubrication fittings are installed and functioning. Wipe away all old grease and dirt from the lube fittings to prevent foreign materials from entering as the new grease is applied. Use a pressure lubricating gun to force in new grease. Apply pressure until clean grease emerges from the lubrication point.

Miscellaneous working parts not provided with lubrication fittings should be oiled regularly with a good grade of lubricating oil.

Lubricate the tractor thoroughly before taking it to a remote location for a prolonged period of time.

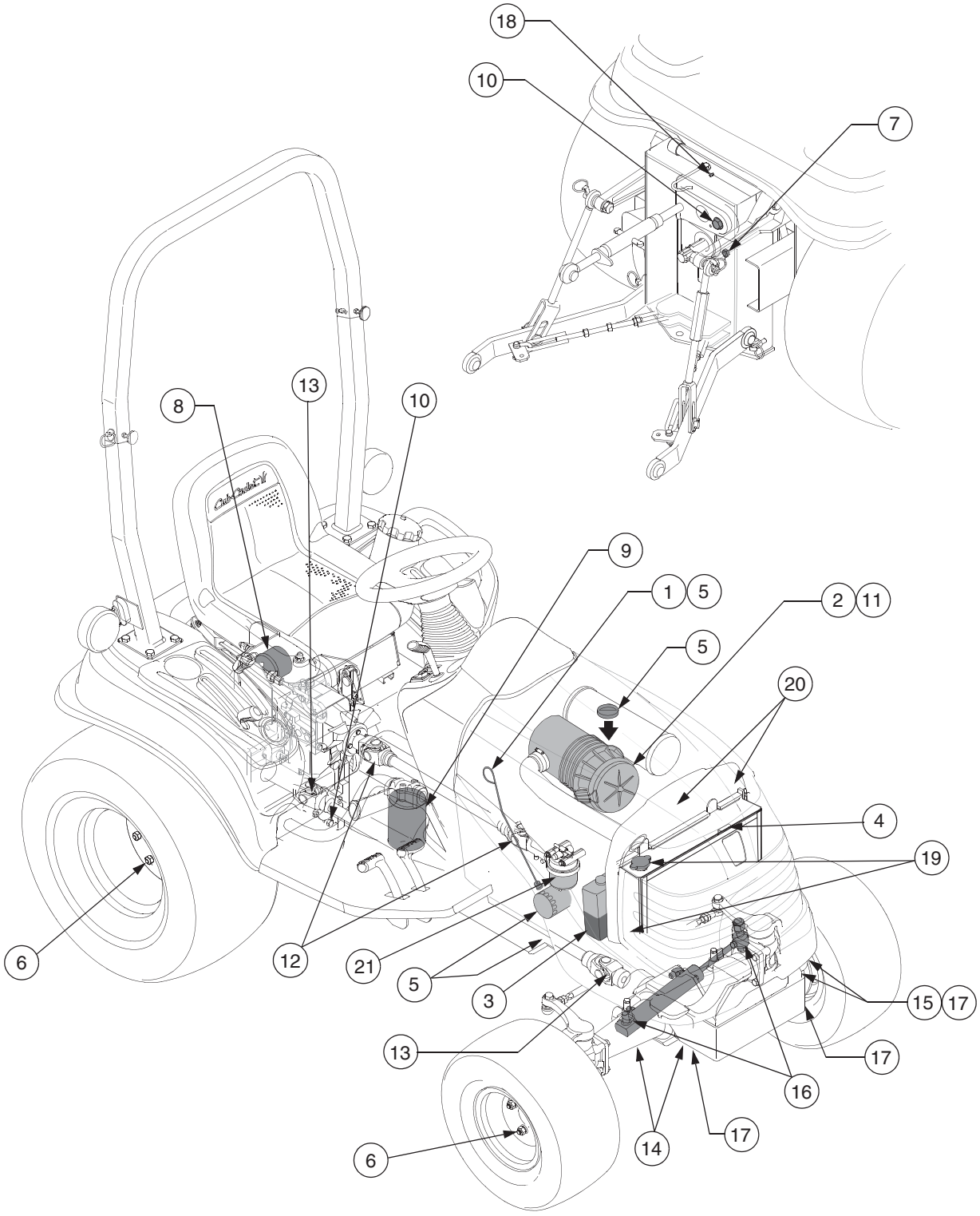
Lubricant is cheap. Use plenty of it. Worn parts can be expensive to replace.

Store your supply of lubricating grease and oil in clean, covered containers to protect them from dust and dirt. Keep the lubricating gun nozzle clean.

LUBRICATION TABLE

<table>
<tr><th rowspan="2">Application</th><th rowspan="2">Type of Lubricant</th><th colspan="5">General Information</th></tr>
<tr><th>Capacity</th><th>API Classification</th><th>Anticipated Ambient Temp.</th><th>SAE Viscosity</th><th>Description</th></tr>
<tr><td rowspan="3">Engine</td><td rowspan="3">Engine Oil</td><td rowspan="3">Approx. 3.5 Qts. w/Filter</td><td rowspan="3">CF or CF-4</td><td>Below 50°F</td><td>5W-30</td><td>Use High Quality Diesel Engine Oil</td></tr>
<tr><td>0°F and Above</td><td>10W-30
10W-40
10W-50</td><td>Cub Cadet 737-3066 (1Qt.)
Use High Quality Diesel Engine Oil</td></tr>
<tr><td>Above 32°F</td><td>30W</td><td>Cub Cadet 737-3032 (1Qt.)</td></tr>
<tr><td>Hydrostatic Transmission and Hydraulic System</td><td>Cub Cadet Drive System Fluid Plus</td><td>Approx. 20 Qts. (5.0 Gal.)</td><td colspan="4">Use Cub Cadet Drive System Fluid Plus
737-3120 (1 Qt.)
737-3121 (1 Gal.)</td></tr>
<tr><td>Front Wheel Drive Axle</td><td>Gear Lube</td><td>Approx. 82 Oz. (2.5 Qts.)</td><td colspan="4">Use Cub Cadet Gear Lube
737-3065 (1 Qt.)</td></tr>
<tr><td>Lube Fittings</td><td>Grease</td><td>As Needed</td><td colspan="4">Use Cub Cadet 251H EP Grease
737-3034 (14.5 Oz. Cartridge)</td></tr>
<tr><td>Radiator and Overflow Reservoir</td><td>Antifreeze</td><td>Approx. 5.3 Qts.</td><td colspan="4">Use High Quality Permanent Type Antifreeze
(Ethylene Glycol with corrosion and rust inhibitor chemicals)
Coolant Mixture Ratio
Distilled Water 50% : Antifreeze 50%</td></tr>
</table>

LUBRICATION AND MAINTENANCE CHART (ILLUSTRATION)



LUBRICATION AND MAINTENANCE CHART

Ref. No.	Operation to be Performed	Service Intervals									
		Before each use	Every 10 Hours	Every 25 Hours	Every 50 Hours	Every 100 Hours	Every 150 Hours	Every 200 Hours	Every 300 Hours	Every 400 Hours	Before Storage
1	Check Engine Oil Level	●									
2	Check Air Cleaner	●									
3	Check Engine Coolant Level	●									
4	Check and Clean Radiator Screen	●									●
5	Change Engine Oil and Replace Oil Filter				first 50 hrs.		●				††
6	Retorque Front and Rear Wheel Lug Nuts		first 10 hrs.			●					
7	Check Transmission Oil Level	●									
8	Replace Hydrostatic Transmission Oil Filter			first 25 hours		●					
9	Replace Hydraulic System Filter			first 25 hours				●			
10	Replace Hydraulic/Hydrostatic Oil							●			
11	Replace Air Cleaner Element								†		
12	Grease Drive Shaft (both ends)				●						●
13	Grease FWD Drive Shaft (both ends)				●						●
14	Grease Front Axle Pivot (front and rear lube fittings)		●								●
15	Check Oil Level of Front Axle AND Final Reduction Gear Cases (both sides)				●						
16	Grease Power Steering Cylinder (both ends)				●						●
17	Change Oil in Front Axle AND Final Reduction Gear Cases (both sides)								●		
18	Grease Three Point Lift Shaft				●						●
19	Change Engine Coolant										Yearly
20	Check Radiator Hoses and Fan Belt					●					●
21	Replace Fuel Filter Element									●	

† More often when operating under dusty conditions
†† If operated less than 100 hours annualy

ACCESSING THE ENGINE COMPARTMENT

WARNING: If the tractor has been recently operated, engine surfaces (including the radiator) will be HOT. Allow the engine to cool before opening the hood, or use extreme caution to avoid burns when the hood is open.

To raise the hood, locate the hood latch below the hood notch at the front of the tractor. Pull the hood latch upward to release the front of the hood. See Figure 32.

- Fully raise the hood so that the hood spring cylinders hold the hood in the raised position.

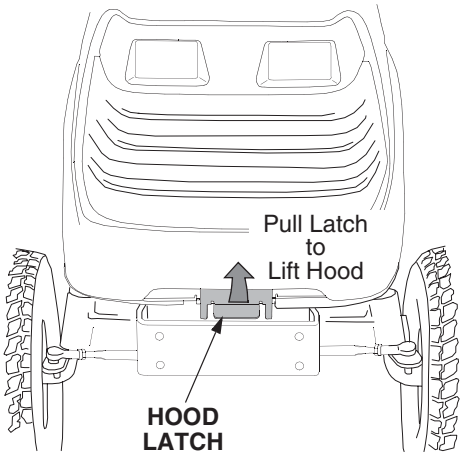


Figure 32

To remove the two side panels:

- Flip the tabs of the two quick release fasteners up and turn to align with the slots in the side panel. See Figure 33.
- Pivot the top of the side panel over and off the quick fastener tabs.
- Pivot the top of the side panel until the two tabs at the bottom of the panel can be withdrawn from the slots of the side panel mounting brackets; then remove the side panel. See Figure 33.

To reinstall the side panels:

- Insert the two side panel tabs into the slots of the side panel mounting brackets. See Figure 33.
- Pivot the top of the panel toward the tractor and over the tabs of the quick release fasteners.
- Pull the quick fastener tabs slightly outward and rotate 1/4 turn (perpendicular to slot) to lock the side panels in place. Flip the tabs down.

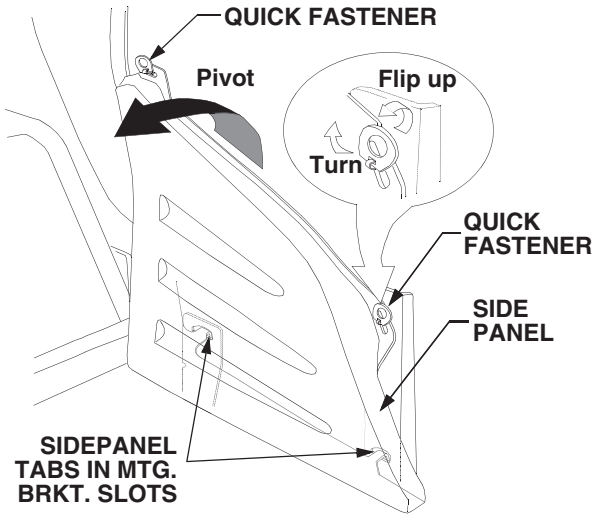


Figure 33

Close the hood by pushing the hood firmly downward until the hood latch fully engages.

GENERAL BATTERY INFORMATION

WARNING:

- Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.
- Should battery acid accidentally splatter into the eyes or onto the skin, rinse the affected area immediately with clean cold water. If there is any further discomfort, seek prompt medical attention.
- If acid spills on clothing, first dilute it with clean water, then neutralize with a solution of ammonia/water or baking soda/water.
- NEVER connect (or disconnect) battery charger clips to the battery while the charger is turned on, as it can cause sparks.
- Keep all sources of ignition (cigarettes, matches, lighters) away from the battery. The hydrogen gas generated during charging can be combustible.
- As a further precaution, only charge the battery in a well ventilated area.
- Always shield eyes and protect skin and clothing when working near batteries.

WARNING: Batteries contain sulfuric acid and may emit explosive gases. Use extreme caution when handling batteries. Keep batteries out of the reach of children.

BATTERY REMOVAL

WARNING: Battery posts, terminals and related accessories contain lead and lead compounds. Wash hands after handling.

The battery is located at the front of the tractor beneath the hood.

To remove the battery:

- Open the tractor hood as described in the previous sub-section.
- Remove the two wing nuts and the battery holddown strap from the battery holddown rods. See Figure 34.
- Spread the locking clips on the sides of the terminal covers and lift the tops of the covers to expose the battery connections. See Figure 34.
- Loosen the cable clamp of the black negative battery lead, then lift the negative cable and its terminal cover off the negative battery post (marked NEG). Move the cable away from the negative battery post.
- Repeat the above procedure to remove the cable and cover from the positive battery post (marked POS).
- Carefully lift the battery out of the tractor.

Install the battery by repeating the above steps in the reverse order.

WARNING: Always connect the positive lead to the battery before connecting the negative lead. This will prevent sparking or possible injury from an electrical short caused by contacting the tractor body with tools being used to connect the cables.

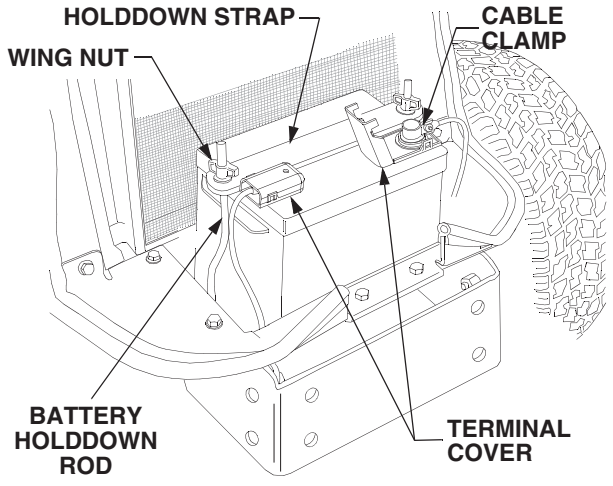


Figure 34

CHARGING THE BATTERY

Test and, if necessary, recharge the battery after the tractor has been stored for a period of time.

- A voltmeter or load tester should read 12.6 volts (DC) or higher across the battery terminals.
- Charge the battery with a 12-volt battery charger at a **MAXIMUM** rate of 10 amps.

Voltmeter Reading	State of Charge	Charging Time
12.7	100%	Full Charge
12.4	75%	90 Min.
12.2	50%	180 Min.
12.0	25%	280 Min.

BATTERY MAINTENANCE

The battery is filled with battery acid and then sealed at the factory. However, even a "maintenance free" battery requires some maintenance to ensure its proper life cycle.

- Spray the terminals and exposed wire with a battery terminal sealer, or coat the terminals with a thin coat of grease or petroleum jelly, to protect against corrosion.
- Always keep the battery cables and terminals clean and free of corrosion.
- Always keep the terminal covers in place and closed over the battery terminals.
- Avoid tipping. Even a sealed battery will leak electrolyte when tipped.

BATTERY STORAGE

- When storing the tractor for extended periods, disconnect the negative battery cable. It is not necessary to remove the battery.
- All batteries discharge during storage. Keep the exterior of the battery clean, especially the top. A dirty battery will discharge more rapidly.
- The battery must be stored with a full charge. A discharged battery can freeze sooner than a charged battery. A fully charged battery will store longer in cold temperatures than hot.
- Recharge the battery before returning to service. Although the tractor may start, the engine charging system may not fully recharge the battery.

HEAD LIGHT BULB REPLACEMENT

The tractor is equipped with headlights. If one of the bulbs should burn out, replace the bulb as follows:

- Fully raise the hood.
- Pull the wire harness plug from the bulb/socket assembly to unplug the wire harness. Refer to Figure 35.

- Turn the bulb/socket assembly approximately a quarter turn counterclockwise to align its tabs with the notches of the reflector, then remove from the reflector.

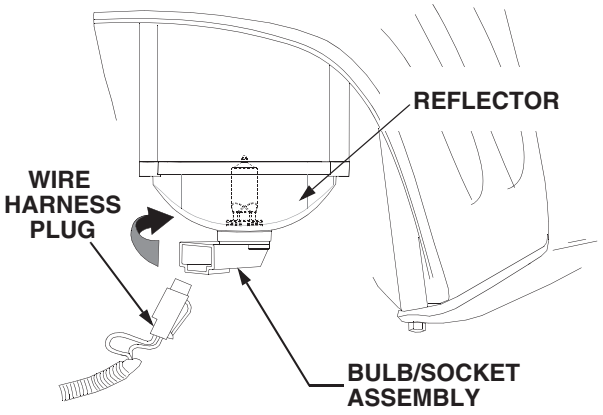


Figure 35

- Replace with a new bulb/socket assembly (Cub Cadet No. 725-04084).
- Align the tabs of the new bulb/socket assembly with the notches of the reflector and insert bulb.
- Turn the bulb/socket assembly clockwise to lock in place. Push the wire harness plug fully into the bulb socket.

HAZARD BULB REPLACEMENT

Hazard lights are installed on each side of the ROPS. To replace the bulbs proceed as follows:

- Insert a **thin** bladed screwdriver, or similar tool, between an amber lense and the hazard light body, then twist to separate the lense from the body. See Figure 36.

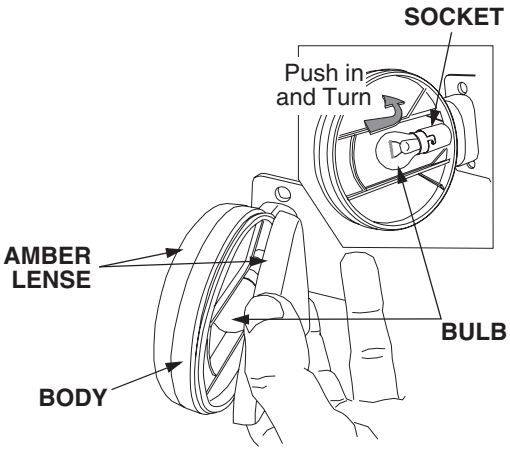


Figure 36

- Push the bulb inward and turn counterclockwise, then pull the bulb outward to remove from the light socket. Refer to Figure 36.
- Align the new bulb with the socket slot, push the bulb into the socket, and turn clockwise to lock it in the socket.
- Position the lense on the hazard light body and push the lense onto the body until it snaps firmly into place on the body.

SERVICING ELECTRICAL SYSTEM

Fuses are installed to protect the tractor's electrical system from damage caused by excessive amperage. Always use the same capacity fuse for replacement. If the electrical system does not function, check for blown fuses. See Figure 37

If you have a recurring problem with blown fuses, have the tractor's electrical system checked by your Cub Cadet dealer.

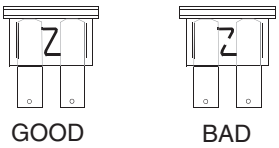


Figure 37

Main Fuse

The main fuse in the tractor wire harness protects the tractor's entire electrical system. A blown main fuse will prevent battery current from passing though the harness.

To replace the main fuse:

- Raise tractor hood and remove right side panel.
- Locate the fuse holder on the front of the bulkhead, just inside the right side of the dash panel. Refer to Figure 38.
- Pull the main fuse from the fuse holder and replace with the same capacity fuse (30 Amp). **NEVER use a higher amperage fuse.**
- Install side panel and lower tractor hood.

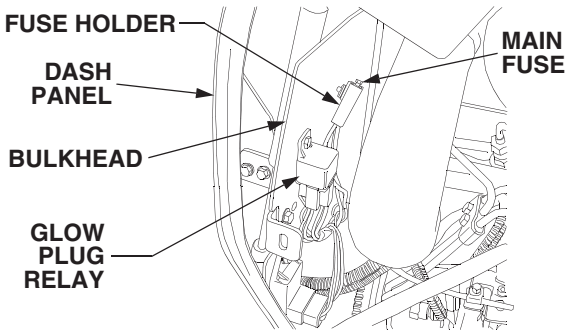


Figure 38

Accessing the Lower Dash Panel Area

Some electrical components are housed inside the lower dash panel. To access the area, remove the dash panel insert by removing the two screws. See Figure 39.

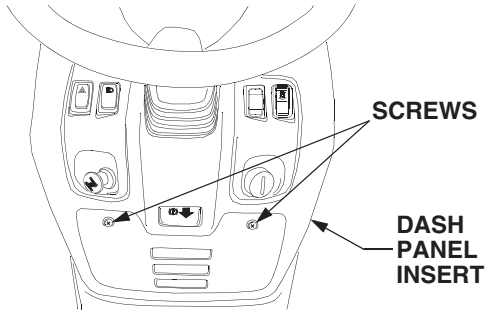


Figure 39

To reinstall the dash panel insert, hook the retaining lip at the bottom of the insert over the bottom edge of the dash opening, pivot the insert upward into position, and secure with the two screws.

Electrical Circuit Relays

Several relays, which operate electrical functions of the tractor, are located inside the lower dash panel. If one of the circuits is not functioning properly, have your dealer electrically check the relay. See Figure 40.

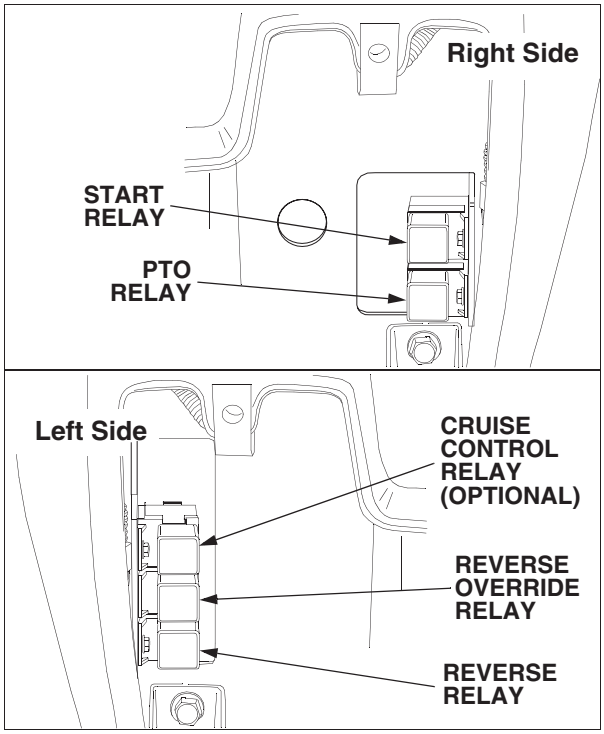


Figure 40

- Start Relay — Functions in the start circuit.
- PTO Relay — Operates in conjunction with both the Reverse Relay and Reverse Override Relay to engage the PTO.
- Reverse Relay — Functions with the PTO Relay and Reverse Switch in the "No Cut in Reverse" circuit.
- Reverse Override Relay — Functions with the Reverse Override Switch and PTO Relay to maintain PTO engagement when driving in reverse.
- Cruise Control Relay — This relay is installed at the factory for use with the optional Cruise Control Kit. The relay functions in the cruise control circuit, when the kit is installed.

Hazard Light Flasher Relay

The flasher relay, which controls the on/off flashing of the hazard lights, is located inside the lower dash panel.

Replace the relay as follows:

- Pull the wire harness from the right side of the dash opening and remove the electrical tape from the flasher relay. See Figure 41.

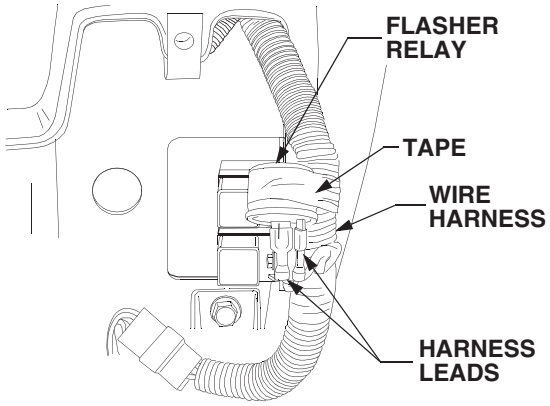


Figure 41

- Note the position of the two harness leads, then disconnect the leads and replace the faulty relay with a new relay. Secure the relay to the wire harness with electrical tape.
- Position the wire harness in the dash panel and reinstall the dash panel insert.

CHECKING TRANSMISSION/HYDRAULIC SYSTEM OIL LEVEL

Check the hydro transmission/hydraulic system oil level before each use. **NOTE:** *Check the oil level only while the engine is stopped and the tractor is standing on a level surface.*

The oil level sight glass is located in the rear of the transmission housing, just to the right of the rear PTO shaft. Refer to Figure 42.

The oil level is okay if oil can be seen through the sight glass. If the level is below the sight glass, oil must be added to the transmission as follows:

- Locate the oil fill plug on the upper right of the rear of the transmission housing. See Figure 42.

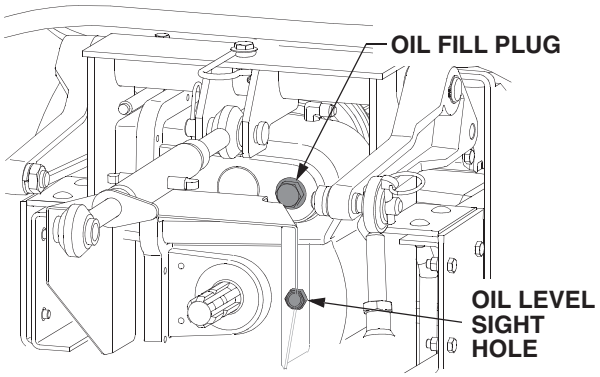


Figure 42

- Clean the area around the oil fill plug to prevent debris from entering the transmission housing.
- Turn the oil fill plug counterclockwise to unscrew from the transmission housing.
- Insert a funnel (preferably with a flexible spout) into the fill hole of the transmission housing.
- Add Cub Cadet Drive System Plus oil until the oil level can be seen through the sight glass. Do not overfill the transmission.

IMPORTANT: ***Always use Cub Cadet Drive System Plus oil to ensure correct formulation. Substitute oils could affect performance and may cause damage to the transmission.***

- Reinsert the oil fill plug into the transmission housing and turn clockwise until tight.

CHANGING THE HYDRO TRANSMISSION AND HYDRAULIC SYSTEM OIL FILTERS

With the exception of the first oil filter change after the 25 hour break-in period, the *hydraulic system oil filter* should be changed along with the transmission/hydraulic system oil after every 200 hours of operation. The *hydro transmission filter* should be changed after every 100 hours of operation.

25 Hour Break-In Period Filter Change

During the initial hours of tractor operation, contaminants caused by the normal break-in of internal transmission and hydraulic system components will collect in the oil filters. Because of this, both the hydro transmission and hydraulic system filters should be changed after the first 25 hours of operation.

Hydro Pump Filter — Part No. BS-492392S

Hydraulic System Filter — Part No. 723-3014

NOTE: *If a front end loader, or a loader and backhoe, is installed on the tractor* ***after the first 25 hours*** *of operation, it is recommended that the filters again be changed after the first 25 hours of operation with these attachments installed*.

Changing Hydro Transmission Oil Filter

The hydro transmission oil filter should be changed after the first 25 of tractor operation, and after every 100 hours operation.

- Stop the tractor engine and lower the mower deck or any other hydraulically lifted implement to the ground.
- Slide the seat fully forward; then tilt seat forward.
- Through the access hole in the rear fender, clean the area around the hydro transmission oil filter to prevent debris from entering the hydraulic system. Refer to Figure 43.
- Stuff shop rags underneath the hydro transmission filter to absorb any lost oil when the filter is removed. Refer to Figure 43.

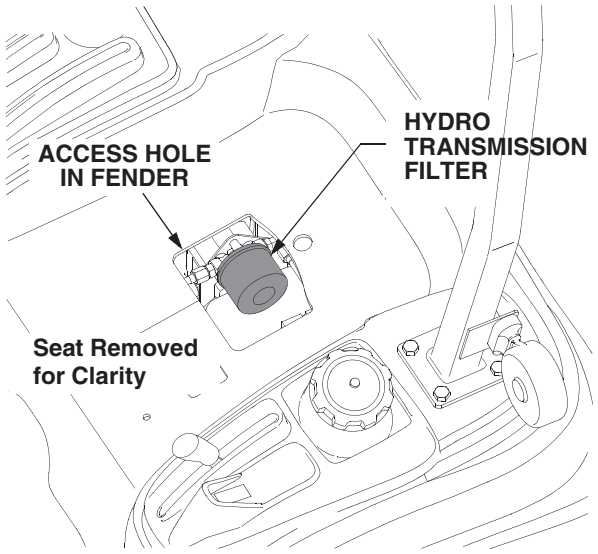


Figure 43

- Apply a light coating of clean transmission oil to the gasket of the new hydro transmission filter.

- Remove the old hydrostatic filter by turning it counterclockwise, and immediately replace with the new filter. Turn the filter clockwise by hand until the gasket contacts the filter base; then tighten the filter an additional 1/2 to 3/4 turn.
- Clean any residual oil from the top of the transmission.

Changing Hydraulic System Filter

The hydro transmission oil filter should be changed after the first 25 of tractor operation, and after every 200 hours operation.

- Stop the tractor engine and lower the mower deck or any other hydraulically lifted implement to the ground. **NOTE:** *To improve access to the hydraulic system filter, the mower deck should be removed from the tractor.*
- The hydraulic system oil filter is remotely mounted in the vertical position between the tractor frame rails. See Figure 44.
- Clean the area around the oil filter to prevent debris from entering the system.
- Position a suitable container below the hydraulic system filter. See Figure 44.

NOTE (25 Hour Break-In Filter Change Only): *Some oil may drain from the transmission when changing the hydraulic system oil filter. If collected in a* ***clean container and kept free of debris,*** *this oil may be reused in the transmission/hydraulic system.*

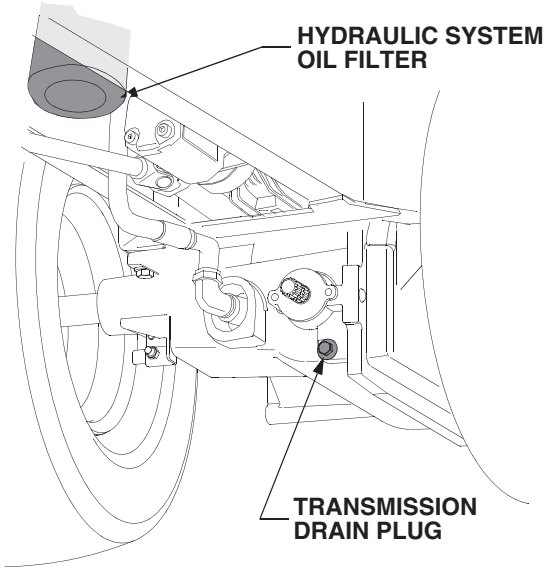


Figure 44

- Apply a light coating of clean transmission oil to the gasket of the new hydraulic system filter.

NOTE: *If performing the 25 hour break-in filter change, install the new filter as quickly as possible to minimize the amount of oil that drains from the transmission.*

- From beneath the tractor frame, remove the old hydraulic system filter by turning it counterclockwise.
- When performing the 200 hour filter change**,** clean the oil filter adapter.
- Install the new filter. Turn the filter clockwise, by hand, until the gasket contacts the surface of the filter adapter; then tighten the filter an additional 1/2 to 3/4 turn.
- Clean the area around the transmission fill plug to prevent debris from entering the transmission (Refer to Figure 42) and remove the plug.
- Following the instructions previously provided in **CHECKING TRANSMISSION/HYDRAULIC SYSTEM OIL LEVEL,** refill the transmission with the clean salvaged oil or with new hydraulic oil.
- Reinsert the oil fill plug into the transmission housing and turn clockwise until tight.
- Start the engine and allow it to run for a few minutes. Shut the engine off, then check for leaks and recheck the oil level in the transmission housing.

CHANGING THE HYDRO TRANSMISSION AND HYDRAULIC SYSTEM OIL

Change the hydrostatic transmission/hydraulic system oil after every 200 hours of operation. The dry capacity of the transmission/hydraulic system is approximately 20 quarts.

Change the transmission/hydraulic system oil as follows:

- Operate the tractor for a short period to warm the oil to the normal operating temperature. Place the tractor on a level surface and engage the parking brake.
- Stop the tractor engine and lower the mower deck or any other hydraulically lifted implement to the ground. **NOTE:** *To improve access to the drain plug and hydraulic system filter, the mower deck should be removed from the tractor.*
- Clean the area around the transmission drain plug and the oil fill plug to prevent debris from entering the transmission. Refer to Figure 42 and Figure 44.
- Place a suitable container(s) beneath the front of the transmission housing.
- Remove the oil fill plug to help vent the transmission, then remove the drain plug and allow the transmission oil to drain into the container(s). Reinstall the drain plug after draining the oil. Refer to Figure 42 and Figure 44.

Dispose of used oil in an environmentally safe manner. If necessary, contact your area EPA office for proper disposal procedures and recycling center locations.

- Change the hydro transmission filter as instructed in **Changing Hydro Transmission Oil Filter**.
- Change the hydraulic system filter as instructed in **Changing Hydraulic System Oil Filter**.
- Insert a funnel (preferably one with a flexible spout) into the fill hole in the rear of the transmission housing.
- Pour Cub Cadet Drive System Plus oil into the transmission housing until the oil level can be seen through the sight glass. Do not overfill the transmission.

IMPORTANT: ***Always use Cub Cadet Drive System Plus oil to ensure correct formulation. Substitute oils could affect performance and may cause damage to the transmission.***

- Reinsert the oil fill plug into the transmission housing and turn clockwise until tight.
- Start the engine and allow it to run for a few minutes. Shut the engine off, then check for leaks and recheck the oil level in the transmission housing.

CHECKING OIL LEVEL IN FRONT AXLE AND FINAL REDUCTION GEAR CASES.

Check the front axle and final reduction gear case oil levels after every 50 hours of operation. Check the oil level only while the engine is stopped and the tractor is standing on a level surface.

Check Front Axle Oil

- The oil fill plug/dipstick is located on the *left* side of the axle housing. See Figure 45.
- Clean the area around the oil fill plug/dipstick to prevent debris from entering the axle housing. See Figure 45.

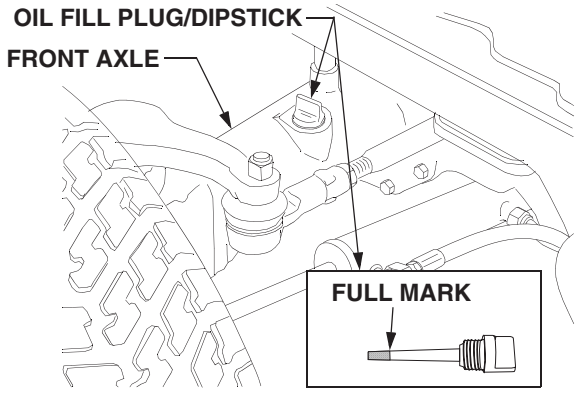


Figure 45

- Turn the oil fill plug/dipstick counterclockwise to unscrew from the axle housing.
- Withdraw the dipstick and wipe it clean, then reinsert and screw in all the way. Unscrew and withdraw again to read the oil level. Always keep the oil level between the bottom and the full mark of the dipstick (See Figure 45).
- If the oil level is low, add only enough *Cub Cadet* Gear Lube to bring the level to the full mark on the dipstick. NEVER overfill the axle housing.
- Reinsert the fill plug/dipstick into the axle housing and turn clockwise to fully tighten.

Check Final Reduction Gear Case Oil

Check the oil level at the two final reduction gear case fill plugs.

- Locate the fill plugs approximately midway up on the rear of the *right* and *left* gear cases. See Figure 46.
- Remove the fill plugs and check that the oil level is at the bottom edge of the fill port opening.

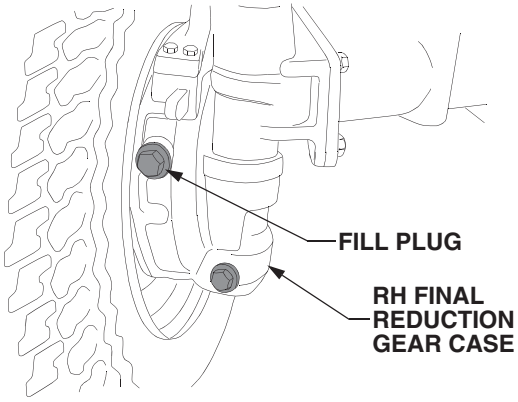


Figure 46

- If the oil level is low, use a funnel with a flexible spout to add enough Cub Cadet Gear Lube to bring the level up to the bottom of the fill port.
- Reinstall the fill plug in each gear case.

CHANGING FRONT AXLE AND FINAL REDUCTION GEAR CASE OIL

Change the front axle and final reduction gear case oil after every 300 hours of operation. The total dry capacity of both gear cases and the axle housing is approximately 82 oz. (2.5 qts.)

Change the front axle and final reduction gear case as follows:

- Operate the tractor for a short period to warm the oil to the normal operating temperature. Place the tractor on a level surface, engage the parking brake, and stop the tractor engine.

- To prevent debris from entering the front axle housing, clean the area around the oil fill plug/dipstick and the axle drain plug located at the center front of the axle. Refer to Figure 45 and Figure 47.

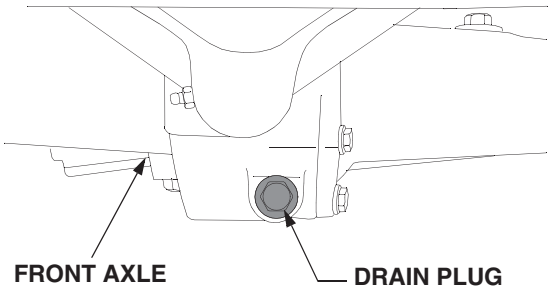


Figure 47

- Place a suitable container beneath the front of the axle housing.
- Remove the oil fill plug/dipstick to help vent the axle, then remove the drain plug and allow the oil to drain into the container. Reinstall the drain plug after draining the oil. See Figure 47.
- Fill the axle with Cub Cadet Gear Lube until the oil level reaches the full mark on the dipstick. Do not over fill the axle housing.
- Reinstall the fill plug/dipstick in the axle housing.
- Move the drain pan underneath either of the final reduction gear cases.
- Remove the fill plug and drain plug from the gear case and drain the oil. See Figure 48. After the oil has drained, reinstall the drain plug.

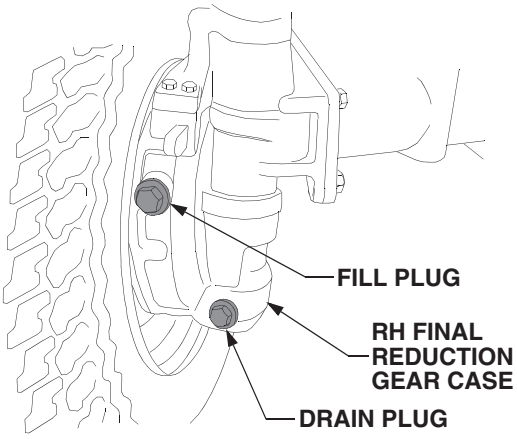


Figure 48

- Using a funnel with a flexible spout, fill the gear case up to the bottom of the fill port with Cub Cadet Gear Lube. Reinstall the fill plug.
- Repeat the previous three steps to change the oil in the other final reduction gear case.

Dispose of used oil in an environmentally safe manner. If necessary, contact your area EPA office for proper disposal procedures and recycling center locations.

LUBRICATION OF DRIVE SHAFT

Lubricate both ends of the drive shaft after every 50 hours of operation as follows:

- The front lube fitting of the drive shaft can be accessed from under the hood or from beneath the tractor frame; the rear lube fitting from beneath the tractor. **NOTE:** *It may be necessary to rotate the drive shaft to view the grease fittings.*
- Using a pressure lubricating gun, lubricate the drive shaft with Cub Cadet 251H EP grease.

LUBRICATION OF FWD DRIVE SHAFT

Lubricate both ends of the FWD drive shaft with Cub Cadet 251H EP grease after every 50 hours of operation. The FWD drive shaft can be accessed from beneath the tractor.

WHEEL LUG NUT TORQUE

The front and rear wheel bolts should be retorqued after the first ten hours of operation and every 100 hours thereafter, or if the wheel assembly has been removed. Using a torque wrench, retighten the lug nuts as follows:

Rear Wheels—In a staggered pattern, retorque the rear wheel lug nuts to 60-70 ft. lbs.

Front Wheels—In a staggered pattern, retorque the front wheel lug nuts to 60-70 ft. lbs.

TIRE MAINTENANCE

Check the tire air pressure after every 50 hours of operation or weekly. Keep the tires inflated to the recommended pressures. Improper inflation will shorten the service life of a tire. See the tire side wall, or the Tire Inflation chart, for proper inflation pressures. Observe the following guidelines:

- Do not inflate a tire above the maximum pressure shown either on the sidewall of the tire or the Tire Inflation chart.
- Do not reinflate a tire that has been run flat or seriously under inflated. Have a qualified tire mechanic inspect and service the tire.

WARNING: Servicing tires can be dangerous. Whenever possible, trained personnel should service and mount tires.

If you must service the tires, observe the following safety precautions to avoid an injury or fatality:

- Make certain the rim is clean and free of rust.
- Lubricate the flanges of the rim and beads of the tire with soap solution.

WARNING: When seating the beads, never inflate a tire over 35 PSI. Inflating a tire with unseated beads beyond 35 PSI could break the bead or rim with sufficient explosive force to cause a serious injury.

- Inflate the tire to seat the beads. If the tire beads have not seated at or before 35 PSI, allow the tire to deflate. Reposition the tire on the rim, lubricate the tire beads and rim flanges, and reinflate until seated - up to a maximum of 35 PSI.
- After the beads have seated, adjust the inflation pressure to the recommended operating pressure.
- Do not use a damaged rim, or attempt to repair a rim by brazing, welding, or pounding out.
- Make certain the jack used to raise the tractor has a weight capacity adequate for lifting the tractor.
- Place the tractor on a firm, level surface and position jack stands to support the raised tractor while repairing tires.
- DO NOT place any part of your body beneath the tractor or start the tractor engine while the tractor is raised off the ground with a jack.

TIRE INFLATION CHART			
Position	**Tread Type**	**Tire Size**	**Max. Inflation Pressure**
Front	Turf	18 x 8.5-8	15 psi
	Ag	18 x 9.5-8	24 psi
Rear	Turf	26 x 12-12	10 psi
	Ag	26 x 12-12	20 psi

MAINTENANCE OF THE ROLLOVER PROTECTIVE STRUCTURE (ROPS)

Periodically (at least every six months) visually inspect the ROPS for damage and loose fasteners. If damage is noted, contact your Cub Cadet dealer.

If an accident has occurred which may have damaged the ROPS, have the ROPS thoroughly inspected by your Cub Cadet dealer.

WARNING: To ensure the structural integrity of the ROPS to provide operator protection, do not attempt to straighten or weld the ROPS. A damaged ROPS should be replaced.

If the ROPS is removed for any reason, make sure the proper hardware is used to reinstall it, and that the recommended torque values are applied to the fasteners.

When replacing or reinstalling the ROPS, apply Loctite® 242 to the threads of the bolts and torque the bolts to 60 to 70 ft. lbs.

TRACTOR STORAGE

If your tractor is not going to be operated for an extended period of time (thirty days to approximately six months), the tractor should be prepared for storage. Store the tractor in a dry and protected location. If stored outside, cover the tractor (including the tires) to protect it from the elements. The procedures outlined below should be performed whenever the tractor is placed in storage.

WARNING: Never store the tractor with fuel in the tank indoors or in poorly ventilated enclosures, where fuel fumes may reach an open flame, spark or pilot light as on a furnace, water heater, clothes dryer, etc.

1. Change the engine oil and filter following the instructions provided in **CHANGING THE ENGINE OIL AND FILTER** in **SECTION 5**.
2. Drain and flush the cooling system. Refill with a minimum 50/50 antifreeze and water coolant solution. Use a higher percentage of antifreeze if the tractor will be subjected to temperatures below minus 30° F.
3. Clean the engine and the entire tractor thoroughly.
4. Fill the fuel tank with FRESH high grade Number Two diesel fuel.
5. Remove the glow plugs and pour a small amount of engine oil into each cylinder. Reinstall the glow plugs and slowly crank the engine to distribute the oil.
6. Fully charge the battery, then disconnect the negative cable at the battery to prevent possible discharge. Thoroughly clean the battery. Recharge the battery periodically when in storage.

   NOTE: *Remove the battery if exposed to prolonged periods of sub-freezing temperatures. Store in a cool, dry location where temperatures are above freezing.*
7. Lubricate all lubrication points.
8. Jack up and block the tractor to remove the weight from the tires if stored for a long period. If not blocked up, reinflate the tires regularly.

NOTE: *We do not recommend the use of a pressure washer or garden hose to clean your tractor. They may cause damage to electrical components; spindles; pulleys; bearings; or the engine. The use of water will result in shortened life and reduce serviceability*.

REMOVING THE TRACTOR FROM STORAGE

- Check the engine oil and coolant levels.
- Fully charge the battery and inflate the tires to the recommended pressure.
- Start the engine and allow to idle for a few minutes to ensure engine is operating properly.
- Drive the tractor without a load to make certain all the tractor systems are functioning properly.

SECTION 5: ENGINE INFORMATION AND MAINTENANCE

Daihatsu L.L.C., the California Air Resources Board (CARB)
and the United States Environmental Protection Agency (U.S. EPA)
Emission Control System Warranty Statement
(Owner's Defect Warranty Rights and Obligations)

EMISSION CONTROL WARRANTY COVERAGE IS APPLICABLE TO CERTIFIED MODEL YEAR 2001 AND LATER ENGINES, WHICH ARE PURCHASED AND USED IN CALIFORNIA, AND TO CERTIFIED MODEL YEAR 2001 AND LATER ENGINES WHICH ARE PURCHASED AND USED ELSEWHERE IN THE UNITED STATES

California And United States Emission Control Defects Warranty Statement

The California Air Resources Board (CARB), U.S. EPA, and Daihatsu are pleased to explain the Emission Control Systems Warranty on your model year 2001 and later Non-road Compresion-ignition engine. In California, new Non-road Compresion-ignition engines must be designed, built and equipped to meet the State's stringent anti-smog standards. Elsewhere in the United States, new Non-road, Compression-ignition engines certified for model year 2001 and later, must meet similar standards set forth by the U.S. EPA. Daihatsu must warrant the emission control system on your engine for the period of time listed below, provided there has been no abuse, neglect or improper maintenance of your Non-road Compresion-ignition engine.

Your emission control system includes such parts as the air cleaner, ignition system, and muffler. Also included may be connectors and other emission related assemblies.

Where a warrantable condition exists, Daihatsu will repair your Non-road Compresion-ignition engine at no cost to you, including diagnosis, parts and labor.

Daihatsu Emission Control Defects Warranty Coverage

Non-road Compresion-ignition engines are warranted relative to emission control parts defects for a period of 1,500 hours or two years, whichever occurs first, subject to provisions set forth below. If any covered part on your Non-road Compresion-ignition engine is defective, the part will be repaired or replaced by Daihatsu.

Owner's Warranty Responsibilities

As the Non-road Compresion-ignition engine owner, you are responsible for the performance of the required maintenance listed in the Operator's Manual. Daihatsu recommends that you retain all your receipts covering maintenance on your Non-road Compresion-ignition engine, but Daihatsu cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the Non-road Compresion-ignition engine owner, you should however be aware that Daihatsu may deny you warranty coverage if your Non-road Compresion-ignition engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your Non-road Compresion-ignition engine to an authorized Daihatsu Service Dealer as soon as a problem exists. The undisputed warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact a Daihatsu Service Representative at 1(800) 233-3723.

Daihatsu Emission Control Defects Warranty Provisions

The following are specific provisions relative to your Emission Control Defects Warranty Coverage. It is in addition to the manufacturer's engine warranty for non-regulated engine found in the Operator's Manual.

1. Warranted Parts — Coverage under this warranty extends only to the parts listed below (the emission control systems parts) to the extent these parts were present on the engine purchased.

   a. Fuel Metering System
   - Injection pump with feed pump
   - Injection nozzle
   - Fuel Filter

   b. Air Induction System
   - Air cleaner
   - Intake manifold

c. Ignition System
- Glow plug

d. Exhaust System
- Exhaust manifold

e. Miscellaneous Items Used in Above Systems
- Vacuum, temperature, position, time sensitive valves and switches
- Electronic controls
- Connectors and assemblies
- Hoses

2. Length of Coverage — Daihatsu warrants to the initial owner and each subsequent purchaser that the Warranted Parts shall be free from defects in materials and workmanship which caused the failure of the Warranted Parts for a period of 1,500 hours or two years, whichever occurs first, from the date the engine is delivered to a retail purchaser.
3. No Charge — Repair or replacement of any Warranted Part will be performed at no charge to the owner, including diagnostic labor which leads to the determination that a Warranted Part is defective, if the diagnostic work is performed at an Authorized Daihatsu Service Dealer. For emission warranty service contact your nearest Authorized Daihatsu Service Dealer as listed in the “Yellow Pages” under “Lawn Mowers," Engines, Gasoline,” “Gasoline Engines,” or similar category.
4. Claims and Coverage Exclusions — Warranty claims shall be filed in accordance with the provisions of the Daihatsu Engine Warranty Policy. Warranty coverage shall be excluded for failures of Warranted Parts which are not original Daihatsu parts or because of abuse, neglect or improper maintenance as set forth in the Daihatsu Engine Warranty Policy. Daihatsu is not liable to cover failures of Warranted Parts caused by the use of add-on, non-original, or modified parts.
5. Maintenance — Any Warranted Part which is not scheduled for replacement as required maintenance or which is scheduled only for regular inspection to the effect of “repair or replace as necessary” shall be warranted as to defects for the warranty period. Any Warranted Part which is scheduled for replacement as required maintenance shall be warranted as to defects only for the period of time up to the first scheduled replacement for that part. Any replacement part that is equivalent in performance and durability may be used in the performance of any maintenance or repairs. The owner is responsible for the performance of all required maintenance, as defined in the Operator’s Manual.
6. Consequential Coverage — Coverage hereunder shall extend to the failure of any engine components caused by the failure of any Warranted Part still under warranty.

ENGINE MAINTENANCE

WARNING: Use care when servicing any component in the engine area. If the engine has recently been operated, components will be hot and could cause burns. Allow the engine to cool before servicing.

WARNING: Before servicing the engine, place the tractor on a level surface, stop the engine, engage the parking brake, and remove the key from the ignition switch.

CLEANING THE ENGINE

This tractor has a liquid-cooled engine. Air must be able to circulate freely through the fins of the radiator. Keep this area free of accumulated dirt and debris to prevent engine overheating, which could possibly cause extensive engine damage.

WARNING: Keep the muffler area clean. Before running the engine, remove all combustible debris from the muffler area.

CLEANING THE RADIATOR SCREEN/RADIATOR

To remove the radiator screen, lift the hood and carefully lift screen by the center tab. Flush the screen with water to clean its surface. See Figure 49.

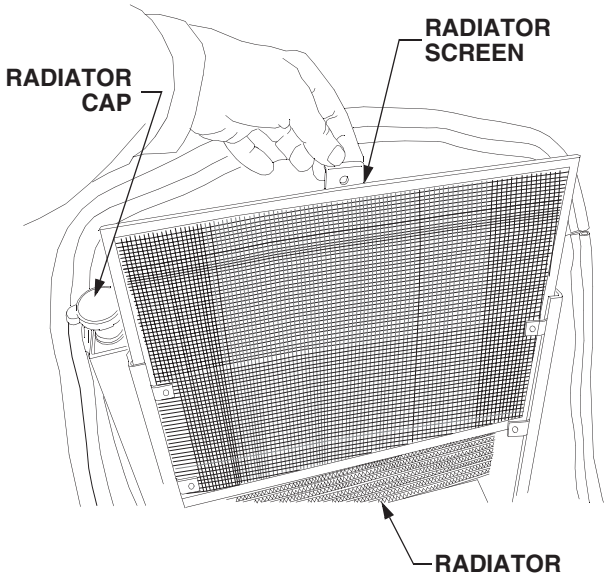


Figure 49

Check the radiator for any accumulation of debris lodged between cooling fins. Blow the debris out using compressed air directed from the fan shroud side of the radiator.

Reinsert the screen, making sure that it is in the slots of the radiator frame.

CHECKING ENGINE OIL LEVEL

Before each use, the oil level in the engine crankcase should be checked to see that it is filled to the correct level. During the "break in" period for the engine, closely monitor the engine oil level. The oil level should be checked hourly during the first 5 hours of operation.

- Check the oil level only while the engine is stopped and the tractor is level. Clean the area around the oil level dipstick to prevent debris from entering the crankcase. See Figure 50.
- If recently operated, allow the engine to cool and the oil to drain back into the oil pan.
- To check the oil level, release the dipstick handle from the retaining clip, then withdraw the dipstick and wipe it clean. Reinsert the dipstick all the way into the tube before withdrawing it for a true reading.

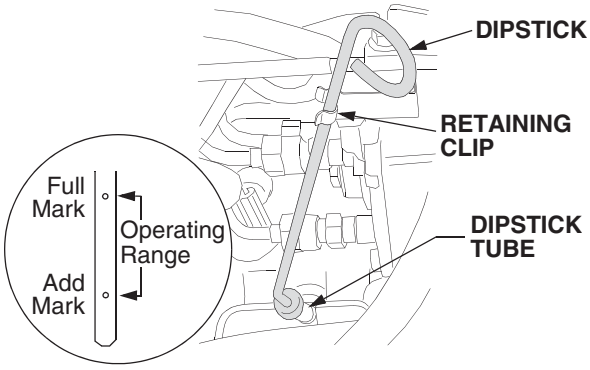


Figure 50

- Always keep the oil level between the full and the add marks on the dipstick. See Figure 50.
- Reinsert the dipstick into the dipstick tube and push firmly into the tube. Clip the dipstick handle into the retaining clip.

ADDING ENGINE OIL

WARNING: Never overfill the engine crankcase. The engine may overheat and/or damage may result if the crankcase is below the "ADD" mark or over the "FULL" mark on the dipstick. For best results, fill to the "FULL" mark on the dipstick as opposed to adding a given quantity of oil. Always check the level on the dipstick before adding more oil.

Refer to the LUBRICATION TABLE in the **MAINTENANCE SECTION** of this manual to determine the proper type of oil to add to the crankcase for the conditions under which the engine will be operated.

- Place the tractor on a level surface and engage the parking brake. Stop the tractor engine and remove the ignition key.

- Clean the area around the oil filler cap to prevent debris from entering the crankcase. See Figure 51.

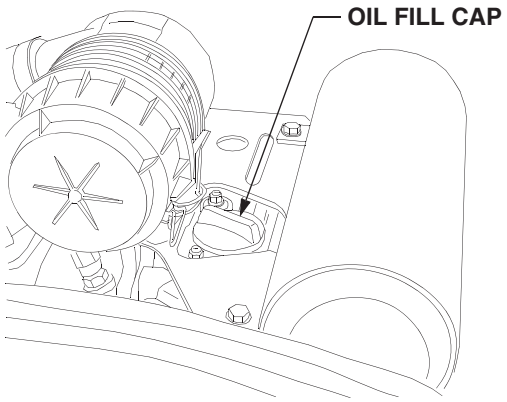


Figure 51

- Turn the oil filler cap counterclockwise to unscrew from the valve cover.
- SLOWLY pour oil into the crankcase until the oil level reaches the “FULL” mark on the dipstick. Refer to Figure 50.
- Insert the oil fill cap into the valve cover and turn clockwise until fully tightened. Reinsert the dipstick into the dipstick tube and push firmly into the tube. Clip the dipstick handle into the retaining clip.

IMPORTANT: ***The oil fill cap and dipstick must always be installed securely in place when the engine is running. Severe engine damage could result from failure to do so.***

CHANGING THE ENGINE OIL AND FILTER

The engine oil and oil filter should be changed after the first fifty hours of operation and every 150 hours thereafter. Refer to the LUBRICATION TABLE in the **MAINTENANCE SECTION** of this manual for the quantity of oil needed, and to determine the proper type of oil to use for the conditions under which the engine will be operated.

WARNING: Because the engine is operated prior to draining the oil, the engine may be hot. Use caution to avoid burning yourself on engine surfaces.

Run the engine for a few minutes to allow the oil in the crankcase to warm up. Warm oil will flow more freely and carry away more engine impurities. Use care to avoid burns from hot oil. While the engine oil is warm, proceed as follows:

- Place the tractor on a level surface and engage the parking brake. Stop the tractor engine and remove the ignition key.
- Clean around the base of the oil filter, the oil filler cap, and the dipstick tube to prevent debris from entering the crankcase.
- Remove the dipstick and oil fill cap from the engine. Refer to Figure 50 and Figure 51.
- Locate the engine drain plug on the *bottom/right* side of the engine (See Figure 52). Place a suitable container below the drain plug to collect the old oil.

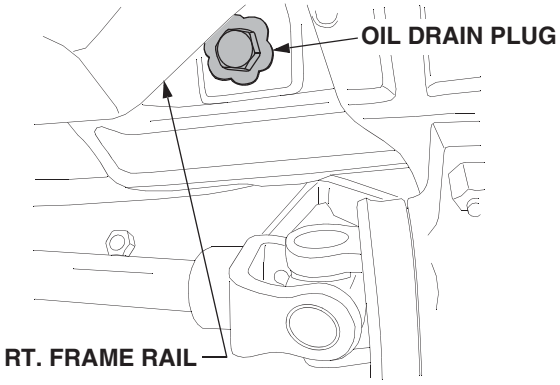


Figure 52

- Turn the drain plug counter-clockwise to remove from the engine.
- Allow the old oil to completely drain from the engine crankcase into the container below.
- Remove the filter by turning it counterclockwise using an automotive type filter wrench to loosen. See Figure 53.

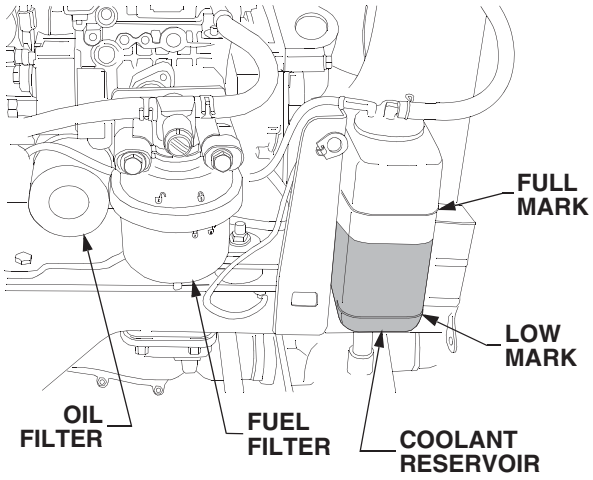


Figure 53

- Reinstall the drain plug in the engine and clean up any residual oil. Refer to Figure 52.
- Apply a light coating of clean oil on the gasket of the new oil filter. Thread the filter on by hand until the gasket contacts the filter mounting surface, then tighten the filter an additional 3/4 turn.
- Refill the crankcase to the "FULL" mark on the dipstick with the appropriate type oil.
- Reinstall the oil fill cap and dipstick.

- Start the engine and run for about 5 minutes. Stop the engine and check for leaks at the oil filter and drain plug.
- Wait 3 minutes and re-check the oil level. If needed, add oil to bring the oil level up to the "FULL" mark.

WARNING: Never overfill the engine crankcase. The engine may overheat and/or damage may result. For best results, fill to the "FULL" mark on the dipstick as opposed to adding a given quantity of oil. Always check the level on the dipstick before adding more oil.

Dispose of used oil in an environmentally safe manner. If necessary, contact your area EPA office for proper disposal procedures and recycling center locations.

IMPORTANT: ***The oil fill cap and dipstick must always be installed securely in place when the engine is running. Severe engine damage could result from failure to do so.***

CHECKING ENGINE COOLANT LEVEL

Before each use, the engine coolant level in the overflow reservoir should be checked to ensure it is within the operating range. Engine coolant absorbs heat from the engine and transfers the heat to the air flowing through the radiator. If the coolant level becomes low, the engine may overheat, which could cause severe damage to the engine.

Use a permanent type antifreeze containing corrosion and rust inhibitors. Dilute the antifreeze with water at a 1:1 ratio to mix the coolant solution (50% antifreeze : 50% water).

NOTE: *Distilled water is recommended for the coolant solution IF your tap water has a high mineral content. Minerals cause scaling in the engine and the radiator coolant passages. System efficiency will be greatly reduced over time and severe engine damage may result.*

- Check the coolant level when the engine is cold and the tractor is on a level surface.
- Raise the tractor hood and check the coolant level in the overflow reservoir on the *right* side of the engine. Refer to Figure 53.
- If the coolant level is below the "LOW" mark, remove the cap from the reservoir and add coolant solution to the "FULL" mark.

NOTE: *The cooling system is a closed type. Normally, to prevent air from entering the system, the radiator cap should not be removed.*

If the overflow reservoir is empty, the radiator cap should be removed and the coolant level in the radiator checked before adding coolant to the reservoir. If necessary, first refill the system through the radiator filler neck as follows (Refer to Figure 49):

WARNING: It is dangerous to remove the radiator cap when the system is hot. Allow the system to cool before removing the radiator cap.

- Turn the radiator cap counterclockwise to the first stop to release any pressure.
- Push downward on the cap and turn counterclockwise until the cap stops then lift cap off.
- Slowly pour coolant into the filler neck until the level reaches the bottom of the filler neck overflow flange.
- Wait a few minutes to allow as much air as possible to escape through the filler neck, then reinstall the radiator cap.
- Fill the overflow reservoir to the "FULL" mark.
- Start the engine and allow it to run for a short period. Stop the engine.
- Recheck the coolant level in the overflow reservoir and refill as needed. Reinstall the reservoir cap.

INSPECTION OF COOLING SYSTEM HOSES

Check the cooling system hoses and fan belt for any cracks or deterioration after every 100 hours of operation. Check for loose hose connections. Replace any damaged hoses and tighten any loose connections. Replace a worn or damaged fan belt.

CHANGING THE ENGINE COOLANT

The engine coolant should be drained and replaced with new coolant solution yearly.

The dry capacity of the cooling system is approximately 5.3 Qts. Dilute the antifreeze with water at a 1:1 ratio to mix the coolant solution (50% antifreeze : 50% water).

Change the engine coolant as follows:

- Drain the coolant when the engine is cold.
- Place the tractor on a level surface and raise the tractor hood.
- Slide the overflow reservoir upward and off the reservoir bracket to access the radiator drain plug.
- Locate the radiator drain plug in the lower *right* rear corner of the radiator. See Figure 54.

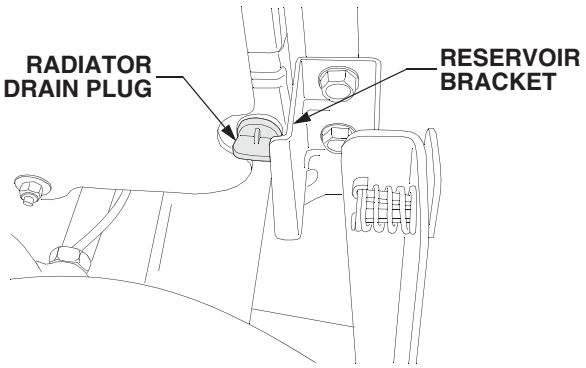


Figure 54

- Place a suitable container beneath the drain plug and remove the cap from the overflow reservoir.
- Turn the drain plug counterclockwise to remove. Allow as much of the old coolant as possible to drain from the system.

Coolant is a toxic substance. Dispose of in an environmentally safe manner. Contact your area EPA office for proper disposal methods and recycling center locations.

- Reinstall the drain plug and turn clockwise until fully tightened.
- Turn the radiator cap counterclockwise to the first stop, then push downward on the cap and turn counterclockwise to remove. Refer to Figure 49.
- In stages, SLOWLY pour the coolant solution into the filler neck, allowing as much air as possible to escape through the neck. Fill to the overflow flange of the filler neck.
- Wait a few minutes to allow air to escape through the filler neck and refill as needed, then reinstall the radiator cap.
- Fill the overflow reservoir to the "FULL" mark.
- Start the engine and allow it to run for a short period. Stop the engine.
- Recheck the coolant level in the overflow reservoir and refill as needed. Reinstall the reservoir cap.

CHANGING THE AIR CLEANER

Check the air cleaner daily or before starting the engine. Check for loose or damaged components and check the condition of the filter element. Remove any buildup of dirt and debris in the air cleaner housing.

Replace the paper air cleaner element after every 300 hours of operation. More often if operating the tractor under extremely dusty conditions.

Check and replace the air cleaner element as follows:

- Unlock the clamps to remove the air cleaner housing cover. See Figure 55.

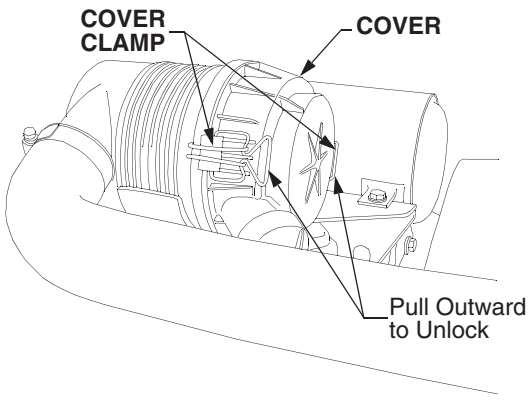


Figure 55

- Pull the air cleaner element from the housing. See Figure 56.

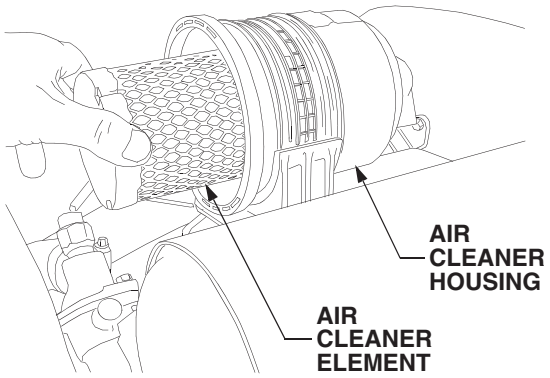


Figure 56

- Lightly blow or brush loose debris from the air cleaner element. Clean any debris from the housing.
- Inspect the paper pleats of the cleaner element for damage and dirt. Inspect the sealing surface on the inner end of the element for deterioration or damage. Replace a damaged or dirty air cleaner element.
- Push the new air cleaner element fully into the housing.
- Position the cover on the housing. Hook the two clamps onto the rim of the housing and lock the clamps. Refer to Figure 55.

IMPORTANT: A *clean and properly installed air cleaner element significantly contributes to prolonging engine life.*

SERVICING THE FUEL FILTER

WARNING: Do not service the fuel filter when tractor is hot or near any source of ignition. Allow the tractor to cool.

The tractor is equipped with an in-line fuel filter located on the *right* side of the engine.

Diesel fuel is a toxic substance. Dispose of in an environmentally safe manner. Contact your area EPA office for proper disposal methods and recycling center locations.

Draining The Fuel Filter

The fuel filter is equipped with a valve to drain condensate (water) that has separated from the diesel fuel and settled at the bottom of the filter.

Drain the filter as needed, or after every 100 hours of operation (Refer to Figure 57).

- Stop the engine and place a suitable container beneath the filter drain valve. See Figure 57.

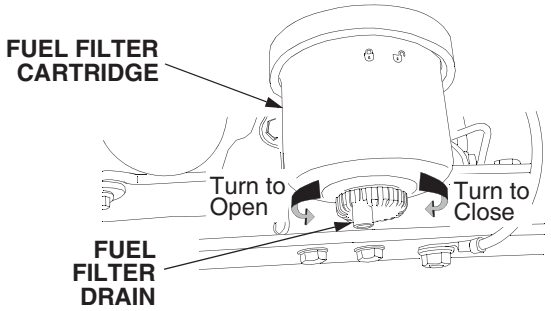


Figure 57

- Turn the filter drain counterclockwise to open. Allow the water at the bottom of the filter to drain until only pure diesel fuel drains from the valve. See Figure 57.
- Turn the filter drain clockwise to close. Refer to Figure 57.
- Slowly turn the air bleed knob counterclockwise until fuel begins to seeps out around the bleed knob. Turn the air bleed knob clockwise to close. Refer to Figure 58.

Changing The Fuel Filter

Replace the fuel filter cartridge after every 400 hours of operation.

NOTE: *There is no shut off valve in the fuel system. To stop the flow of fuel while replacing the filter, it will be necessary to carefully clamp the fuel line between the fuel tank and the filter.*

- Place a suitable container beneath the filter drain.

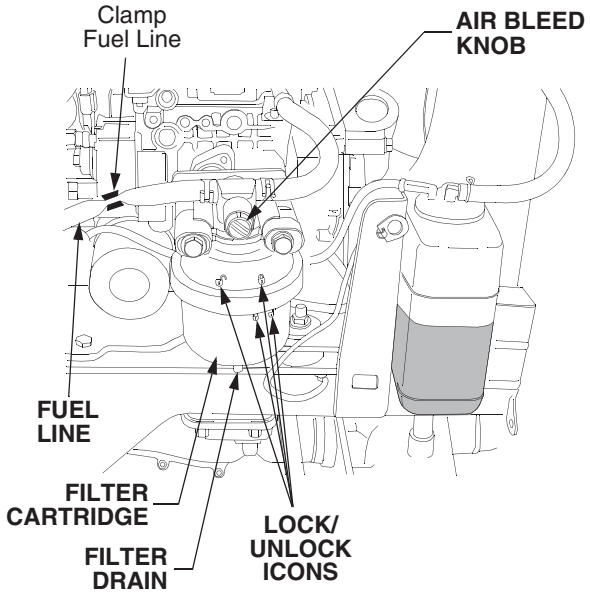


Figure 58

- Clamp the fuel line just to the rear of the fuel filter. See Figure 58.
- Open the filter drain and drain the filter into the container below. Close the filter drain.
- Turn the filter approximately 1/4 turn counter-clockwise (as viewed from bottom) to align the unlock icons. Refer to Figure 58.
- Pull the filter cartridge straight downward to remove from the filter body.
- Align the unlock icons of the new filter cartridge and filter body, and push the new filter cartridge fully up into the filter body.
- Turn the new filter cartridge approximately 1/4 turn clockwise to lock. **NOTE:** *The lock icons on the body and cartridge should be aligned or nearly aligned*.
- Remove the clamp from the fuel line. The filter should begin to fill will diesel fuel.
- Slowly turn the air bleed knob counterclockwise until fuel begins to seeps out around the bleed knob. Turn the air bleed knob clockwise to close. Refer to Figure 58.
- Remove the catch container and properly dispose of the diesel fuel.
- Start and run the tractor's engine for a short period to fully bleed any residual air from the filter, fuel lines, and injection pump.

SECTION 6: SPECIFICATIONS

Engine

Manufacturer	Diahatsu
Horsepower	23
Cylinders	3 OHV
Cooling System	Liquid
Bore	2.68 in. (68 mm)
Stroke	3.07 in. (78 mm)
Displacement	52 cu. in. (850 cc)
Low Idle Speed	1500 ± 100 rpm
High Idle Speed	3600 rpm
Valve Clearance (Cold)	
Intake	.008 in. (0.2 mm)
Exhaust	.008 in. (0.2 mm)
Crank Case Capacity (With Filter)	3.5 qts. (3.3 L)

Cooling System

Type	Pressure System, Thermostat Bypass, Impellar Type Pump
Thermostat:	
Start to Open	180°F (82°C)
Fully Open	205°F (96°C)
Radiator Cap	13 psi
Capacity	5.3 qts. (5.0 L)

Electrical System

Charging System	Alternator
Capacity	40 Amp Regulated
Battery	12 Volt / 500 cca
Starter Motor	Solenoid

Fuel System

Fuel Tank Capacity	5.6 gal. (21.1 L)
Fuel Type	Diesel Fuel
Fuel Filter	In-line
Fuel Pump	Mechanical

Transmission

Type	Hydrostatic
Drive	Selectable 4WD
Oil	Cub Cadet Drive System Plus Fluid
Capacity (Includes Hydraulics)	5.0 gal. (18.9 L)
Shift Range	Hi/Lo
Forward Travel Speed	
Hi Range	Forward — 0 to 8.0 mph Reverse — 0 to 4.0 mph
Lo Range	Forward — 0 to 4.0 mph Reverse — 0 to 2.0 mph
Differential Lock	Foot Pedal Control

SPECIFICATIONS

Hydraulic Lift System

Type	Auxiliary Pump
Control	Fender Mounted Lever
Pump Capacity	5.5 gal./min.
Maximum Pressure	1500 psi

Brakes

Type	External Dual Disc
Parking Brake	Hand Operated Lever

Steering

Type	Hydrostatic Power
Turning Radius	35 in.

Power Take-Off

Type	Electric Clutch
Speed	
Rear	540 rpm
Mid/Front (Optional)	2000 rpm
Shaft Size	
Rear	1.375 in. (35 mm)
Mid	1.0 in (25.4 mm)
Horse Power at PTO	20

Tires

Turf-Front	18 x 8.5-8
Turf-Rear	26 x 12-12
Ag-Front	18 x 9.5-8
Ag-Rear	26 x 12-12

General Dimensions

Overall Length (w/o Hitch)	85 in.
Overall Length (w/Hitch)	103 in.
Overall Width	45 in.
Overall Height (w/o ROPS)	51 in.
Overall Height (w/ROPS)	82 in.
Wheelbase	55 in.
Minimum Ground Clearance	5 in.
Weight w/ROPS	1350 lbs.

SECTION 7: OPTIONAL EQUIPMENT AND ACCESSORIES

When purchasing your tractor, you probably had it equipped for your particular needs at that time. You may later wish to obtain additional equipment or accessories to perform other tasks. Refer to the chart below for a list of optional equipment and accessories currently available through your *Cub Cadet* dealer.

DESCRIPTION	MODEL NUMBER
Front End Loader (1)(6)	590-812-100
Front End Loader Mountin Kit	590-813-100
Front Hitch Kit (2)	590-817-100
54" Mower Deck (5)	590-810-100
60" Mower Deck (5)	590-811-100
Mower Deck Mounting Kit	590-842-100
Tractor Cab	590-824-100
48" Snow Thrower (3)	590-818-100
PTO Kit - Front (4)	590-816-100
Hydraulic Valve Kit	590-841-100
42" Rotary Tiller (6)	590-669-100
60" Finish Mower (6)	590-819-100
Front Weight Bracket/Bumper	590-821-100
60" Dozer Blade (4)	590-615-100
60" Rear Blade (6)	590-626-100
48" Box Blade (6)	590-627-100
Post Hole Digger (6)	590-628-100
60" Rake (6)	590-632-100
Angle Kit	590-623-100
Rear Weight Box	590-836-100
Canopy	590-835-100
Cruise Control Kit	759-04077
Transmission Oil Heater Kit	759-04039
Engine Coolant Heater	759-04003

(1) Requires hydraulic valve kit 590-841-100 and 590-813-100 loader mounting kit
(2) Requires hydraulic valve kit 590-841-100
(3) Requires front hitch kit 590-817-100 and front PTO kit 590-816-100.
(4) Requires front hitch kit 590-817-100
(5) Requires mounting kit 590-842-100
(6) See TRACTOR WEIGHTING in SECTION 2: OPERATION

Cub Cadet

LIMITED WARRANTY
FOR CUB CADET COMPACT TRACTORS
AND CUB CADET ATTACHMENTS

Proper maintenance of your Cub Cadet equipment is the owner's responsibility. Follow the instructions in your owner's manual for correct lubricants and maintenance schedule. Your Cub Cadet dealer carries a complete line of genuine Cub Cadet parts and quality lubricants and filters for your equipment's engine, transmission, chassis and attachments.

This limited warranty covers any defect in materials or workmanship in your Cub Cadet compact tractor and Cub Cadet attachments from the date of purchase for the first user purchaser.

COMPACT TRACTOR (less the power line)	ONE YEAR OR 1500 HOURS (whichever is first)
POWER LINE:	
NON-COMMERCIAL	TWO YEARS OR 1500 HOURS (whichever is first)
COMMERCIAL	ONE YEAR OR 1500 HOURS (whichever is first)
BATTERY	ONE YEAR PRORATED WITH 100% REPLACEMENT DURING THE FIRST 3 MONTHS
CUB CADET ATTACHMENTS	ONE YEAR

Commercial use is defined as either having hired operators or used for income producing purposes. In no event will we be responsible for loss of use, loss of profit, loss of or damage to crops, inconvenience, commercial loss or other incidental or consequential damages whatsoever.

The power line is defined as (and is limited to):

- Cylinder Block
- Cylinder Head
- (Front) Gear Case
- Oil Pan
- Clutch Housing and all Parts Contained Therein
- Transmission Case or Center Case
- Differential Housing
- Final Drive Case
- Front Axle Case
- Mid and Rear PTO Output Shafts

We will replace or repair any part or parts without charge through your Authorized Cub Cadet Compact Tractor Dealer.

ITEMS NOT COVERED

The warranty does not cover routine maintenance items such as lubricants, filters (oil, fuel, air and hydraulic), cleaning, tune-ups, brake and/or clutch inspection, adjustments made as part of normal maintenance, blade sharpening, set-up, abuse, accident and normal wear. It does not cover incidental costs such as transporting your equipment to and from the dealer, telephone charges or renting a product temporarily to replace a warranted product. Specific items not covered are: lamp bulbs, injection nozzles, fuel injection pumps, glow plugs, strainers, fuses, brake linings, clutch facings, clutch discs, coolant, rubber products, glass products, plastic products, packings, belts and damage caused by use in an application tor which the product is not designed or any other misuse, neglect, incorporation or use of unsuitable attachments or parts, unauthorized alteration, improper installation, or any causes other than defects in material or workmanship of the product.

There is no other express warranty.

HOW TO OBTAIN SERVICE

Contact your authorized Cub Cadet servicing dealer who sold you your Cub Cadet equipment. If this dealer is not available, see the Consumer Yellow Pages under "lawn mowers" for the name of a dealer near you.

If you need further assistance in finding an authorized Cub Cadet servicing dealer, contact:

CUB CADET LLC
POST OFFICE BOX 361131
CLEVELAND, OHIO 44136-0019

HOW DOES STATE LAW APPLY?

This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

CHANGES

Cub Cadet LLC reserves the right to make changes in the design and other changes in its products at any time without notice and without incurring any obligation to product previously manufactured or purchased.